



CURA REPORTER

Migration in Minnesota

by John Fraser Hart and Susy Svatek Ziegler

People are born, they move, they die; these simple facts explain all population change. Migration played a major role in population growth in Minnesota counties during the 1990s, which had a roughly concentric pattern (Figure 1, next page). The counties that grew most rapidly were in a ring around the Twin Cities and in the lakeshore retirement arc across the north-central part of the state. Around these two cores of growth were counties that grew less rapidly, and along the western margin of the state and in the southwestern corner of the state many counties actually lost population.

The decennial census of population, on whose data we have based our maps, has been likened to a snapshot that is taken once every 10 years, and as in most group photographs, at least one party typically is making a funny face or doing something completely out of character. In the 1990 U.S. Census, Koochiching County in central northern Minnesota was the county that was “out of character” because it had accumulated a large labor force to build a new paper mill and then lost much of its population when the mill was completed and the construction workers departed.

Other Minnesota counties were undoubtedly out of character in terms of their long-range trends when the census was taken in 2000. A prime example is Swift County in western Minnesota, which had a novel one-time influx of population when the new “prison-for-rent” was opened at Appleton. In time these inmates will be released, but others will replace them and future censuses

will count them as members of the Swift County population. Such exceptional counties complicate our analysis of maps

based on decennial census data, but they do not obscure broad regional patterns and trends.

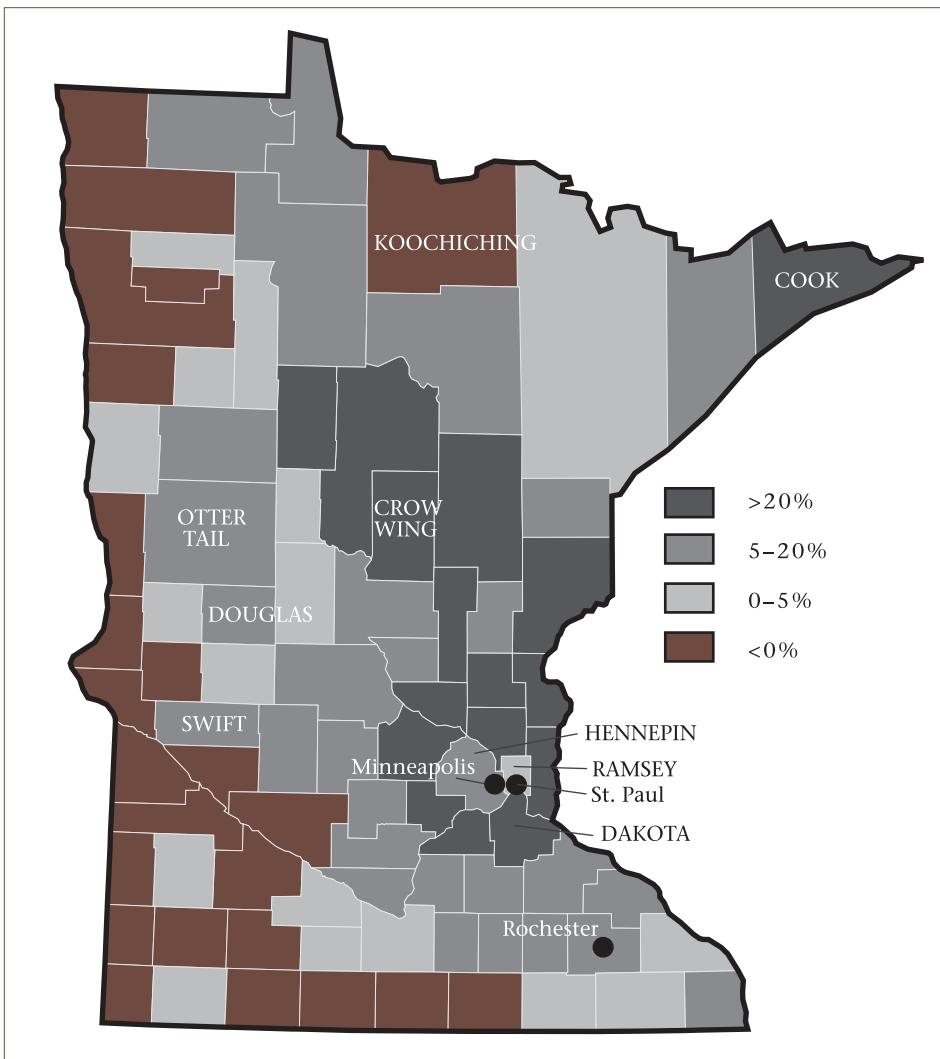


Photo by Steve Schneider

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Figure 1. Percentage Change in Population, 1990–2000



Natural Increase and Migration

We used the natural increase technique to calculate the net number of people who migrated to or from the state and to or from each county during the decade. The *natural increase* is the surplus of births over deaths. In the years from 1990 through 1999, for example, 652,150 children were born to residents of Minnesota and 364,854 residents of the state died, for a natural increase of 287,296 persons (Table 1).

Even though the state’s population increased in the 1990s, its natural increase was 41,522 persons fewer in the

1990s than in the 1980s. The number of deaths in the 1990s was 23,853 higher than in the 1980s and the number of births was 17,669 lower. Minnesotans are reproducing at an even lower rate than in previous years.

If this trend persists, the state will have to continue to depend on *in-migration* to maintain the growth of its population. Many of the in-migrants will speak a different language and have a different cultural heritage from the people who already live here, as they always have. (We use the term *in-migrants* rather than *immigrants* because an

indeterminate number of these people have come from other states rather than from foreign countries.)

The Twin Cities metropolitan ring and Rochester had fairly high rates of natural population increase during the 1990s, and most counties in the eastern part of the state had respectable rates. Rates in the northern part of the state were low, however, and in many western and southwestern counties the number of deaths actually exceeded the number of births (Figure 2). These counties suffered a natural *decrease* in population, and their demographic outlook is bleak.

Viewed another way, the natural increase is the population change that would have occurred if there had been no migration. We subtracted the natural increase from the change that actually did occur in the state and in each county to calculate the net number of people who moved in or out during the decade. Between 1990 and 2000, for example, the population of Minnesota grew from 4,375,099 to 4,919,479 for an increase of 544,380 persons (Table 2).

The difference between the total increase of 544,380 persons and the natural increase of 287,296 persons can be explained only by a net migration of 257,084 persons into the state from other states and countries during the 1990s (Table 2). The total number of people who moved to Minnesota obviously was much larger, but their numbers were offset by Minnesotans who moved out of the state. Thus, the 1990s were a great change from the 1980s, when the state lost nearly 30,000 net migrants (Table 2).

A net of slightly more than one-quarter of a million new residents

Figure 2. Natural Increase in Population, 1990–2000, per 100 Persons in 1990

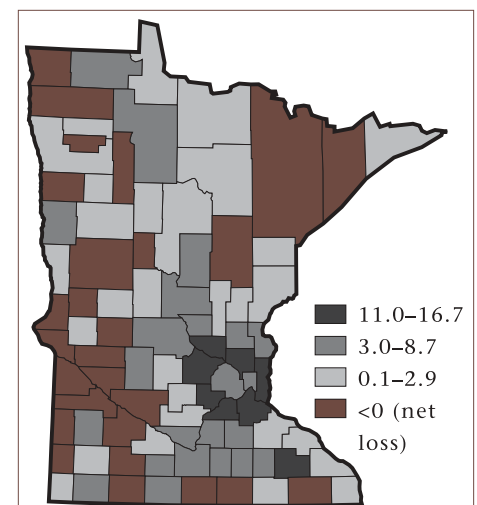


Table 1. Natural Population Increase in Minnesota (Number of Persons)

	1980–1989	1990–1999
Births	669,819	652,150
Deaths	341,001	364,854
Natural increase	328,818	287,296

Table 2. Population Change in Minnesota (Number of Persons)

	1980–1989	1990–1999
Population in 1990 or 2000	4,375,099	4,919,479
Population in 1980 or 1990	4,075,970	4,375,099
Population increase	299,129	544,380
Natural increase	- 328,818	- 287,296
Number of migrants	- 29,689	257,084

moved into Minnesota during the 1990s, accounting for an impressive 47% of the state's total population growth. The rate of in-migration was greatest in the metropolitan-ring counties (Figure 3), which also had high rates

Figure 3. Migrants, 1990–2000, per 100 Persons in 1990

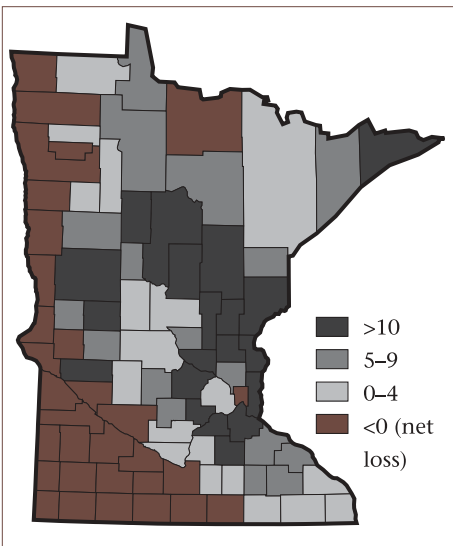
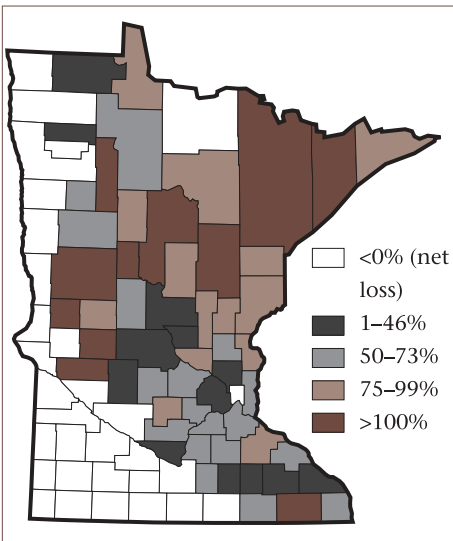


Figure 4. Migrants as a Percentage of Population Growth, 1990–2000



of natural increase (Figure 2). Migrants really made a difference in the lakeshore retirement counties of the north and in the lake-studded Alexandria Moraine country of Otter Tail and Douglas Counties (Figure 3), where they accounted for more than 100% of the total population increase (Figure 4)—because these counties suffered a natural decrease of population (Figure 2).

Most of the rest of the counties in the state enjoyed at least modest in-migration, but in sharp contrast, the inability of the counties of the west and southwest to attract migrants exacerbated their already great demographic disadvantage (Figure 3). These counties

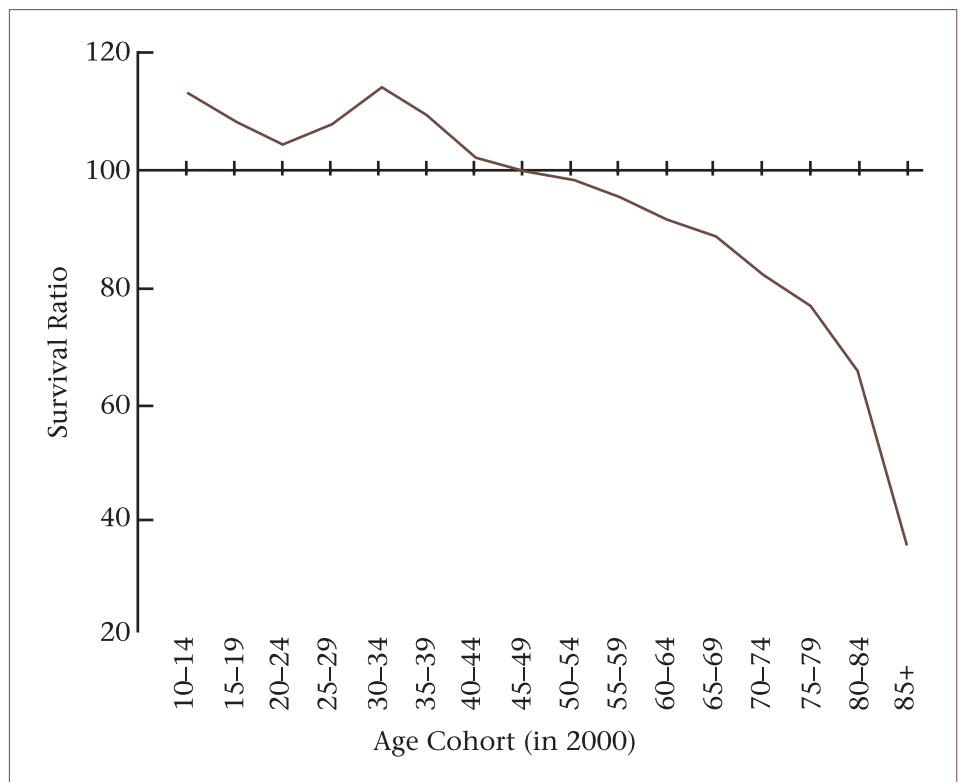
have been losing population steadily for more than half a century.

Cohort Survival Analysis

We used the cohort survival analysis technique to find how changes in life phase influence migration in Minnesota. An *age cohort* consists of all people born during a 5-year period. Its members are 10 years older when a census is taken 10 years later. The number of people in a given age cohort in a given area can change only if people of that age enter or leave the area, whether by migration or by death. Death is not a significant factor in population change below the age of 60, so we may assume that changes in the numbers of people in younger age cohorts result almost entirely from migration.

We use data for the entire state to illustrate cohort survival analysis (Table 3). Each line in the table shows numbers of people for each age cohort in 2000. The first column lists age cohorts (in five-year increments); the second column shows the number of people in each cohort in 2000; and the third column lists the number of people in the same cohort in 1990, but begins

Figure 5. Profile of Survival Ratios* for Age Cohorts in Minnesota, 1990–2000



* The survival ratio is the number of people in an age cohort at the end of the decade divided by the number of people in the cohort at the beginning of the decade, multiplied by 100. Ratios above 100 indicate net in-migration in that cohort, whereas ratios below 100 indicate net out-migration.

Table 3. Cohort Survival Numbers and Ratios for Minnesota, 1990 and 2000

Age Cohort in 2000	2000*	1990*	Change*	Survival Ratio†
0–4	329,594	—	+ 329,594	—
5–9	355,894	—	+ 355,894	—
10–14	374,995	336,238	+ 38,757	112
15–19	374,362	347,257	+ 27,105	108
20–24	322,483	311,693	+ 10,790	104
25–29	319,826	297,166	+ 22,660	108
30–34	353,312	312,183	+ 41,129	113
35–39	412,490	378,056	+ 34,434	109
40–44	411,692	406,268	+ 5,424	101
45–49	364,247	362,939	+ 1,308	100
50–54	301,449	304,149	- 2,700	99
55–59	226,857	235,352	- 8,495	96
60–64	178,012	193,432	- 15,420	92
65–69	153,169	172,702	- 19,533	89
70–74	142,656	171,102	- 28,446	83
75–79	122,677	160,036	- 37,359	77
80–84	90,163	135,732	- 45,569	66
85+	85,601	250,794	- 165,193	34
Total	4,919,479	4,375,099	+ 544,380	

* Figures indicate number of persons in each age cohort.

† The formula for calculating survival ratio is $\frac{2000 \text{ population}}{1990 \text{ population}} \times 100$.

with the 10–14 age cohort because people aged 0–4 and 5–9 in 2000 had not been born in 1990 and people aged 0–4 in 1990 (the youngest cohort) were aged 10–14 in 2000.

The fourth column in Table 3 shows how the population in each cohort changed during the decade from 1990 to 2000. For example, the 10–14 age cohort of 2000 had gained 38,757 people between 1990 and 2000, a clear indication of net in-migration. We divided the number of people in each cohort in 2000 by the number of people in the same cohort in 1990 and multiplied the result by 100 to calculate

the net *survival ratio* for each cohort during the intervening decade, which is listed in the fifth column of the table. Thus, the 10–14 age cohort had a survival ratio of 112 between 1990 and 2000, the 15–19 age cohort had a survival ratio of 108, and so on.

A cohort survival ratio above 100 shows net in-migration of people in that age cohort, whereas a ratio below 100 indicates net out-migration of people in that cohort. During the 1990s, the state attracted migrants in each age cohort below 50–54, but lost migrants in each older cohort, where death was an increasingly important form of

out-migration (Table 3). We did not calculate ratios for children under the age of 10 in 2000 because they had not been born when the 1990 U.S. Census was taken. Unfortunately, we have no data on the numbers of deaths in specific age cohorts, so we could not adjust survival ratios for deaths, but it appears that a Minnesotan who had achieved the ripe old age of 75 in 1990 had about one chance in three of living to be 85.

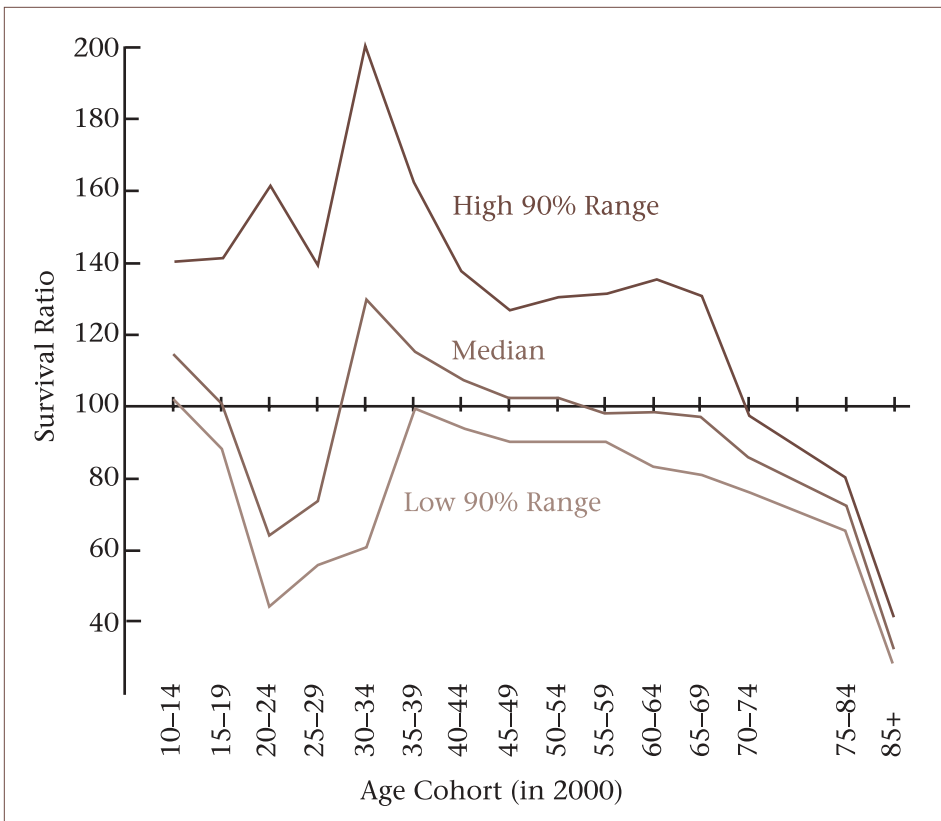
We constructed a profile of the survival ratios for the state by plotting the ratio for each cohort (Table 3) on a graph with a horizontal axis representing a ratio of 100 (Figure 5). The 10–14 age cohort had a ratio of 112, the 15–19 cohort dropped to a ratio of 108, and so on to the 85+ cohort, which had a ratio of 34. The younger cohorts, which enjoyed in-migration, are above the horizontal axis and the older cohorts, which suffered out-migration, are below it.

Then we constructed profiles of the median and the high and low 90% range of survival ratios for each age cohort for all counties in Minnesota to show the variation in migration within the state (Figure 6). For each cohort we ranked the ratios for all counties, from highest to lowest. We plotted the median, which is the middle value in this ranking. We also plotted the ratios that included the 10% of counties in the state with the highest survival ratios (the high 90% range) and the 10% with the lowest survival ratios (the low 90% range).

The composite median county had in-migration in the two youngest age cohorts, major out-migration in the 20–24 and 25–29 cohorts, and the greatest in-migration in the 30–34 cohort (Figure 6). Then in-migration tapered off slowly until the age of 64, after which out-migration steadily increased. The low 90% range tracks the median fairly closely, but the high 90% range shows that some counties enjoyed exceptional in-migration in the 20–24, 30–34, and 45–64 age cohorts. This migration is related to changes in life phase.

Most of us make our first major migration when we graduate from high school and go off to college, or enter military service, or head for the big city. During the 1990s, most Minnesota counties had heavy out-migration of the 20–24 college-aged cohort in 2000, but the counties with four-year colleges and the metropolitan counties had heavy influxes, and counties with cities of

Figure 6. Median and Ninety-Percent Range of Survival Ratios* for Each Age Cohort in Minnesota Counties, 1990–2000



* The survival ratio is the number of people in an age cohort at the end of the decade divided by the number of people in the cohort at the beginning of the decade, multiplied by 100. Ratios above 100 indicate net in-migration in that cohort, whereas ratios below 100 indicate net out-migration.

10,000 or more did a better job of holding on to the members of this cohort (Figure 7).

We might even posit that a county lends its young people to one of the college counties for four years or so and

then must face the challenge of trying to entice them back home. In the 1980s they had only limited success, but in the 1990s nearly all counties except the college counties—which lost the people who were students a decade ago—had in-migration of people in the 30–34 cohort (Figure 8). The heaviest in-migration, however, was in the suburban ring around the Twin Cities and, perhaps surprisingly, in the northern lakeshore retirement counties, whereas the new prison for rent in Appleton made Swift County, with a ratio of 211, stick out like a sore thumb in western Minnesota.

The migration of the 30–34 age cohort also shows why anyone analyzing cohort survival ratios must be sensitive to the instability of small numbers, because the number of people in some cohorts in some counties can produce some extreme ratio values. For example, in Cook County, at the very tip of the northeastern arrowhead, this age cohort had 125 people in 1990 and 258 in 2000, for a ratio of 206, one of the highest in the entire state for any cohort, even though the actual increase of 133 people was less than 0.2% of the size of this cohort in Hennepin County.

The people in the 30–34 age cohort are moving to the suburbs, settling down, and starting to raise families. Figure 8 shows the move to the suburbs, Figure 5 shows that people are settled down and make little subsequent migration until they approach retirement age, and Figure 9 shows that

Figure 7. Survival Ratio* for Age Cohort 20–24, 2000

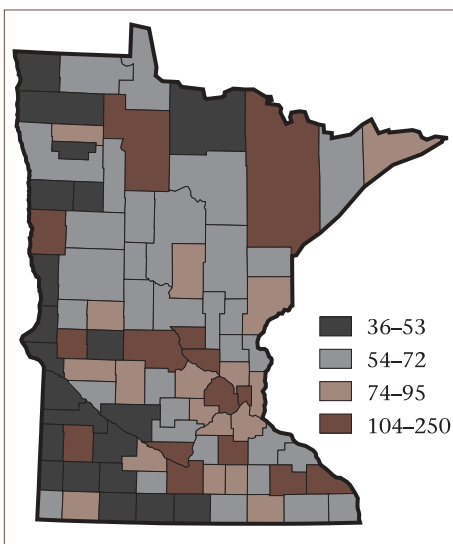


Figure 8. Survival Ratio* for Age Cohort 30–34, 2000

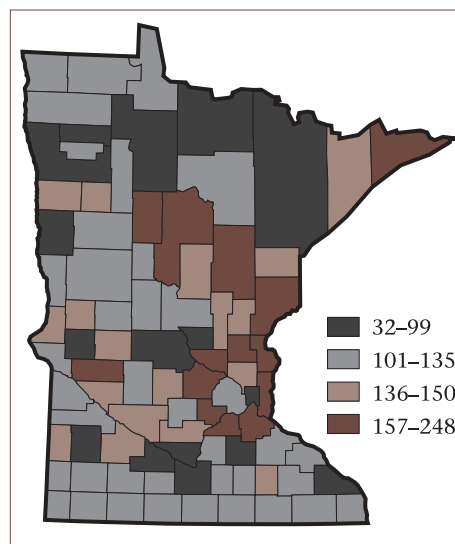
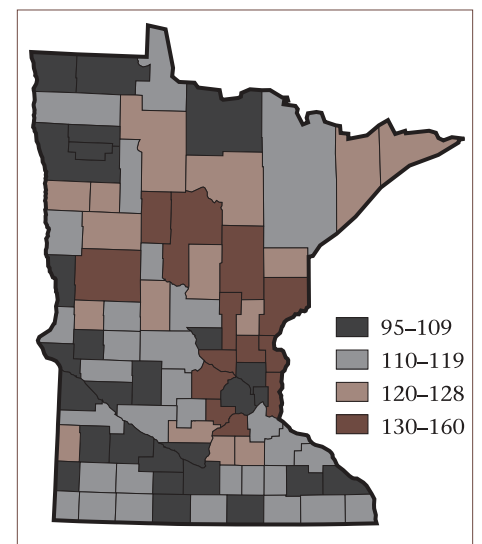
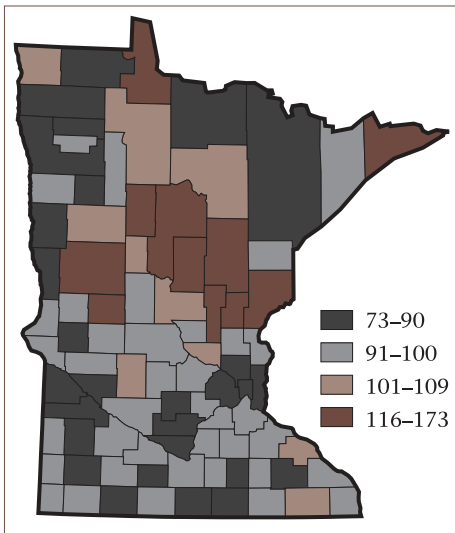


Figure 9. Survival Ratio* for Age Cohort 10–14, 2000



* The survival ratio is the number of people in an age cohort at the end of the decade divided by the number of people in the cohort at the beginning of the decade, multiplied by 100. Ratios above 100 indicate net in-migration in that cohort, whereas ratios below 100 indicate net out-migration.

Figure 10. Survival Ratio* for Age Cohort 65–69, 2000



* The survival ratio is the number of people in an age cohort at the end of the decade divided by the number of people in the cohort at the beginning of the decade, multiplied by 100. Ratios above 100 indicate net in-migration in that cohort, whereas ratios below 100 indicate net out-migration.

children in the 10–14 cohort, who are not likely to move on their own, have moved with their parents (the 30–34 age cohort) to the suburbs or to the lakeshore counties.

The in-migration of young couples with children—who presumably would move only to areas where jobs were available—suggests that the economy of the northern lakeshore resort and retirement counties has matured and stabilized, and the continuing migration of people in the 65–69 age cohort into these counties (Figure 10) suggests that winterizing the lakeshore cottage and turning it into a permanent retirement home still remains popular.

We can visualize these differences by comparing cohort survival ratio profiles for a central Twin Cities county (Ramsey), a Twin Cities suburban-ring county (Dakota), and a northern lakeshore retirement county (Crow Wing; Figure 11). Ramsey County gained in-migrants aged 15 to 30, but lost population in all older cohorts. Dakota County lost young people in the 20–24 age cohort, but gained young couples (along with their children) and then gradually tapered off. Crow Wing County suffered even greater out-migration of young people aged 20 to 30, but also gained young couples with children and enjoyed

significant in-migration of retired people between the ages of 55 and 74.

Conclusion

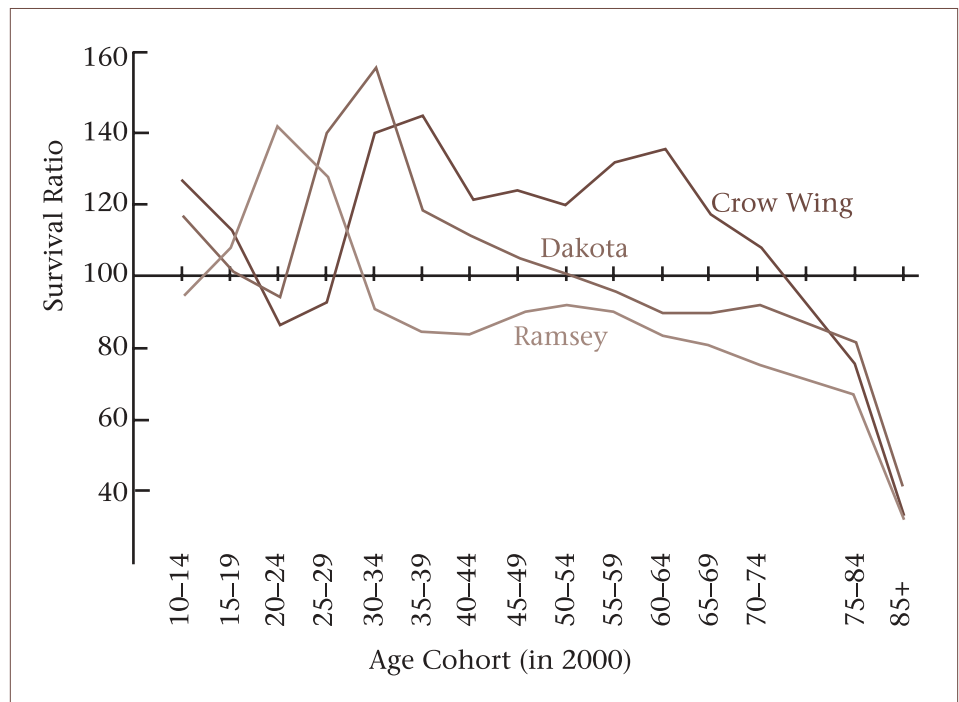
Minnesota bled migrants during the 1980s, but enjoyed a transfusion during the 1990s, when in-migration accounted for nearly half of the state's total population increase. College towns and metropolitan areas were the prime magnets for young people, who then moved to the metropolitan-ring counties when they got married and started raising families. The metropolitan-ring counties had a substantial surplus of births over deaths, but population growth in the northern lakeshore retirement counties depended on attracting retired people and young families with children because these counties had low or even negative rates of natural increase.

About half of the state's counties were blandly stable demographically, with only modest changes of less than one person per square mile, but the western and southwestern counties, which have been losing population steadily for more than half a century, remain a problem area if you consider

population growth desirable (some do not). These counties remain dominated by farming, whose labor requirements are shrinking rapidly as farming becomes increasingly efficient and productive, and they have developed no new alternative employment opportunities to hold their own people, much less to attract anyone new.

John Fraser Hart is professor of geography and **Susy Svatek Ziegler** is assistant professor of geography at the University of Minnesota. This paper is an outgrowth of their seminar, "Explorations in the Geography of Minnesota," in which Drew McBride, Brian Swanson, Deacon Warner, and Jeff Young participated. They are grateful to these students for their enthusiastic participation; to Martha McMurry of the Minnesota State Demographic Center for providing data on births and deaths; to Amy West of the Government Publications Library in the University of Minnesota Libraries for extracting age data from the catacombs of the 2000 U.S. Census of population; to Doug Pribyl for processing data; and to Jodi Larson for translating the typescript onto a disk.

Figure 11. Profiles of Survival Ratios* for Age Cohorts in Selected Minnesota Counties, 1990–2000



* The survival ratio is the number of people in an age cohort at the end of the decade divided by the number of people in the cohort at the beginning of the decade, multiplied by 100. Ratios above 100 indicate net in-migration in that cohort, whereas ratios below 100 indicate net out-migration.

Project Update: Housing for Migrant Workers in Minnesota

In the February 2001 issue of the *CURA Reporter*, Victor Contreras, Jaime Duran, and Kathryn Gilje contributed the lead article, “Migrant Farmworkers in South-Central Minnesota,” which described results from a migrant farmworker-led survey. Sponsored by CURA’s U-Migrant Project and Community Program in cooperation with the University of Minnesota Extension Service, the survey revealed there was much work to be done to improve daycare, youth education, leadership development, and working conditions for migrant workers in south-central Minnesota. Survey results indicated a lack of affordable housing as one of the biggest problems facing migrant workers. Based on these results, workers joined together to form Centro Campesino, a nonprofit advocacy group for migrant workers that today has 850 members.

Members of Centro Campesino decided to develop a follow-up survey to document living conditions in four counties in south-central Minnesota. The organization needed assistance conducting the survey and coordinating the project, so CURA connected Centro Campesino with Dr. Ann Ziebarth, associate professor in the School of Design, Housing, and Apparel at the University of Minnesota, who specializes in rural housing issues. Jimmy Byun, a graduate student in the Department of Agronomy and Plant Genetics at the University, was hired through CURA’s Community Assistantship Program (CAP) to help conduct the survey, enter data, and prepare the final report. The survey was conducted in the summer of 2001 and the report—*Migrant Worker Housing: Survey Results from South-Central Minnesota*—was published in Spanish and English in fall 2002 by Centro Campesino, in collaboration with Hispanic Advocacy and Community Empowerment through Research (HACER) and CURA. The report indicates that employer-provided, open-market housing for migrant workers is limited and recommends that migrant workers develop, own, and manage their own cooperative housing project.

The town of Montgomery, Minnesota, has become a focus for action. With 600 seasonal workers joining a year-round



Photo by Robert Friedman

A lack of affordable housing is one of the biggest problems facing migrant workers in south-central Minnesota. Employer-provided housing—such as these barracks-style cinder-block buildings—is often overcrowded and frequently does not offer private cooking facilities or bathrooms.

population of 2,500, the options for temporary housing in Montgomery are scarce. City officials are aware of acute housing shortages and have been working with Centro Campesino and the nonprofit Three Rivers Community Action to develop affordable housing. Centro Campesino’s community organizing experience and Three Rivers’ expertise in housing development have been a good fit for the needs of Montgomery. A \$100,000 land donation has been secured through the Texas-based Joe and Louise Cook Foundation and a parcel of land in the Montgomery area has been identified for housing development. Plans call for 29 housing units, with 15 rental units and 14 limited equity cooperatives. A 6,000-square-foot community center is also planned. A new nonprofit organization will be formed to take ownership of the project and a private management company out of Mankato will run operations.

In late March, Centro Campesino submitted a 300-page U.S. Department

of Agriculture (USDA) rural development preapplication requesting \$2.4 million to fund 15 housing units and the community center. Centro staff expect to hear back from the USDA about the status of their application within 60 days. They also plan to seek additional funding from Federal Home Loan Bank of Des Moines, Greater Minnesota Housing Fund, and the Minnesota Housing Finance Agency.

At a news conference in Faribault in late March, Centro Campesino released the findings of the report and discussed plans for cooperative housing development and the proposed community center. The event was well attended and received coverage from the *Faribault Daily News*, *Pioneer Press*, and Minnesota Public Radio. The report is available from HACER by calling 612-624-3326 or sending e-mail to hacer@umn.edu. It can also be downloaded as a 1-megabyte PDF file (requires Adobe Acrobat Reader to view or print) at <http://www.hacer-mn.org/PDFs/migrant121202.pdf>.

State and Local Internship Programs Temporarily Suspended

Due to recent cuts in its budget for fiscal year 2002–2003 and anticipated cuts in its budget for next fiscal year, CURA's Local Government Planning Internship Program and State Agency Internship Program have been temporarily suspended.

Tom Scott, director of CURA, called the cuts "unfortunate but unavoidable" given the current state budget situation and the reductions to higher education. "For many years, these two programs have provided an opportunity for collaboration between the University of Minnesota and state and local government," Scott noted. Both have offered "excellent internship opportunities for students" while providing "critical assistance to state agencies and local planning departments."

The Local Government Planning Internship Program, which was created in 1990, offered University of Minnesota graduate students enrolled in the Humphrey Institute's planning program internship opportunities with local government planning offices. Awarded

on a competitive basis, the internships gave students hands-on learning experience with planning projects while providing local communities with valuable research and technical assistance.

During its 13-year existence, the local internship program placed more than 35 graduate students with planning departments in 5 counties and 16 cities in the metropolitan area, including Chaska, Cottage Grove, Crystal, Eagan, Falcon Heights, Forest Lake, Fridley, Minneapolis, New Brighton, Robbinsdale, Rosemount, Roseville, Shakopee, South St. Paul, St. Paul, and West St. Paul.

The State Agency Internship Program, founded in 1986, fostered opportunities for graduate students to work on research, program development, program evaluation, or other short-term projects for a state agency in Minnesota. Like the local planning internships, the state internships were awarded on a competitive basis.

During the last 17 years, the state internship program has placed nearly

100 graduate students with more than two dozen state agencies, including:

Board of Water and Soil Resources
Council on Black Minnesotans
Department of Agriculture
Department of Economic Security
Department of Finance
Department of Health
Department of Human Rights
Department of Human Services
Department of Labor and Industry
Department of Natural Resources
Department of Public Service
Department of Revenue
Department of Transportation
Environmental Quality Board
Intergovernment Systems Advisory Council
Legislative Auditor
Legislative Commission on Minnesota Resources
Metropolitan Council
Minnesota Supreme Court
Public Defenders Office
State Historical Society
State Planning Agency
Veterans Home Board
Vocational Technical Education Board

CURA associate Ed Drury, who directed both programs, reflected on the significance of the cuts. "These programs were good for the students and good for the community. The projects that received funding were selected on the basis of their importance to the state agency and the value of the learning experience for students," he noted, "and provided great opportunities for both parties." Drury said that one indicator of these programs' success was that a number of students, after being graduated from the University, returned to work on a permanent basis with the local community or state agency with which they had interned.

Scott remains hopeful both programs can be restored at a future date. "Most of CURA's work is with community organizations and nonprofits. These programs were unique because they fostered relationships with government. It is my hope that the suspension of the programs will be temporary."

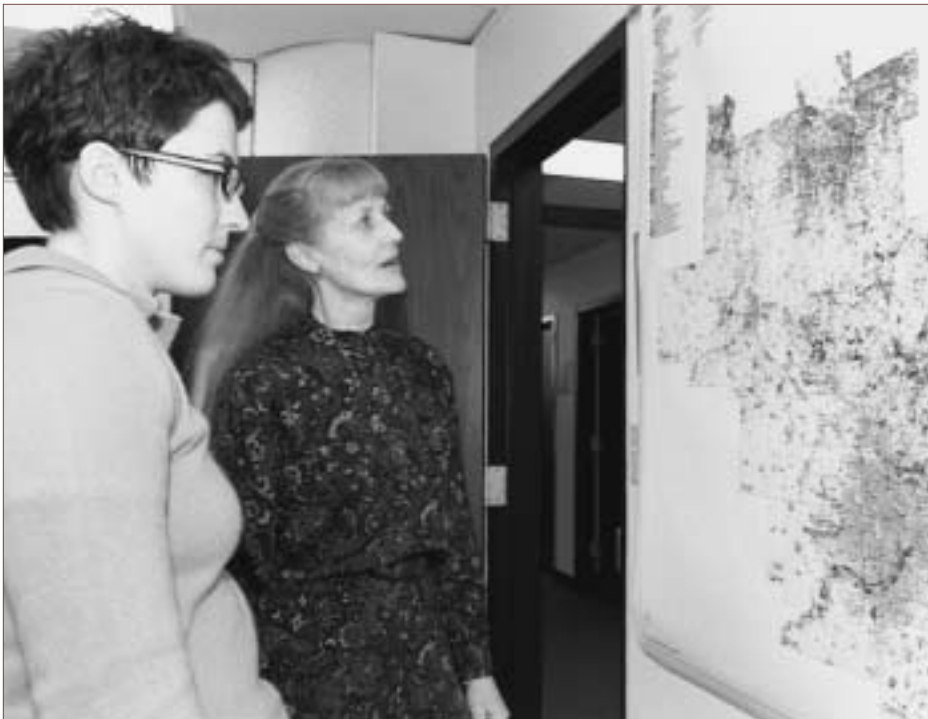


Photo by Steve Schneider

The state and local internship programs at CURA have provided graduate students with excellent educational opportunities, while offering state agencies and local planning departments critical research and technical assistance.

The Twin Lakes Redevelopment Project: A Case Study in Residential Brownfield Redevelopment

by Jill Mazullo



Photo courtesy of City of Roseville Community Development Department

The Twin Lakes redevelopment area, a large, inner-ring suburban brownfield reuse project located in Roseville, Minnesota.

Considering that the real estate mantra is “location, location, location,” it is not surprising that residential brownfield redevelopment is a hard sell. Brownfields—abandoned or underutilized industrial sites—generally have a reputation as undesirable locations for housing because of fears about pollution and contamination. The assumption is that brownfield sites are more appropriate for commercial and industrial uses than residential uses because remediating the soil to residential standards can be prohibitively expensive. City councils are loath to commit funds to a speculative residential brownfield project. Similarly, developers like to know the market is behind them and thus prefer to undertake residential development on cleaner pastures

rather than tackle the complexities of brownfield reuse.

Turning a former industrial park into a residential development raises many questions for cities and developers: How contaminated is the soil? How clean would the site have to be to meet federal and state standards? What would such a cleanup cost? Would anyone want to live on the site of a former brownfield? Why not build on a greenfield site on the urban fringe where contamination is less likely? Although a degree of uncertainty is inherent in residential brownfield redevelopment, many of these questions have become easier to answer during the last decade due to innovations such as risk-based corrective action, new contamination treatment technologies, an array of

federal and state brownfield funding programs, and the evolving smart growth movement. These innovations, in turn, have led to an increasing number of brownfields being redeveloped as housing.

Community and economic development staff at the City of Roseville, an inner-ring suburb of the Twin Cities, are currently redeveloping a collection of abandoned and polluted truck terminals and other former industrial sites known as Twin Lakes. The 170-acre Twin Lakes site will be redeveloped as a mixed-use business park and residential area and could include as many as 700 units of housing when completed. In many ways, the redevelopment of Twin Lakes is a microcosm of the changing development patterns for inner-ring suburban brownfields.

The Center for Urban and Regional Affairs (CURA) and the Humphrey Institute of Public Affairs at the University of Minnesota have complemented Roseville's efforts to redevelop Twin Lakes. Through CURA's Local Government Planning Internship Program, the city's Community Development Department hired a series of four graduate assistants (including myself) between 1999 and 2002 to assist with the Twin Lakes planning process. Roseville also worked with 13 graduate students enrolled in a Humphrey Institute planning capstone class in 2001 to study the city's development plan for Twin Lakes and identify alternatives for how the area might be redeveloped.

In a previous article published in the October 2001 *CURA Reporter*, Jeffrey L. Miller, a CURA planning intern at Roseville from 1999 to 2000, used the example of Roseville's Twin Lakes redevelopment effort to highlight the obstacles to and opportunities for inner-ring suburban brownfield redevelopment projects. Miller's article focused primarily on commercial-industrial reuses at Twin Lakes because that was the city's plan for this site at the time. In recent years, market forces have changed the focus for redevelopment on some parcels at Twin Lakes to residential reuses. Based on my experiences as an intern with the City of Roseville during 2000–2001, this report uses the Twin Lakes project as a case study of the challenges of residential brownfield redevelopment and offers several policy prescriptions for encouraging such projects in other suburban communities.

Residential Redevelopment at Twin Lakes: A Case Study

The Twin Lakes site is located just north of Rosedale Mall and is bounded by County Road C to the south, Cleveland Avenue to the west, and Snelling Avenue to the east. The site encircles the southern end of Langton Lake. The 170 acres of land on the Twin Lakes site are largely occupied by trucking terminals, remnants of a declining industry. In the 1950s, Twin Lakes sat on the outskirts of the Twin Cities metropolitan region, making it an ideal location for trucking terminals. Today, the site is surrounded by residential and commercial development and, consequently, is seriously underutilized.

With its easy access to Interstate 35W and proximity to both downtown Minneapolis and downtown St. Paul, Twin Lakes is prime real estate that

would have been redeveloped years ago were it not sullied by pollutants—mostly petroleum and solvents used to clean engines—from decades of use by trucking companies. Like many suburban brownfield sites, Twin Lakes is only mildly polluted, but this has nonetheless slowed and complicated the redevelopment process.

Although fear of uncovering pollution has stymied many redevelopment projects, Roseville has taken advantage of a progressive state-level Pollution Control Agency, pilot grants from the federal Environmental Protection Agency (EPA), a regional housing shortage, and a boom economy in the 1990s to plan, clean up, and begin redevelopment of the area. Other built-out, cash-strapped, inner-ring suburbs may find lessons in Roseville's approach.

Planning for Redevelopment. The Twin Lakes redevelopment project has benefited from a long-term vision for the area. In 1988, the City of Roseville designated the original 273-acre Twin Lakes site as a tax increment financing (TIF) district, which allows anticipated tax revenues on a property to be used to develop it and the debt to be paid off using the captured tax base for a specified time. City planners also developed a Twin Lakes Land Use Guide Plan to direct redevelopment efforts at Twin Lakes. Because the purpose of the redevelopment project was to invigorate the city's tax base and provide a better mix of living-wage jobs, the original land-use plan included a mix of retail, office, and business uses. More than 100 acres on the site were developed in accordance with the initial land-use plan during the 1990s.

In 2001, Roseville completed a Twin Lakes Renewal Strategy to consolidate various land-use plans for the remaining 170 undeveloped acres in Twin Lakes. As part of this strategy, the city provided opportunities for public comment and conducted an Alternative Urban Areawide Review (a mid-sized environmental investigation report). Although the original intention was for Twin Lakes to be developed entirely as commercial-industrial uses, public comment from residents and development corporations suggested that residential uses might also be integrated into the redevelopment plan. Because of the strong residential character of the land to the north of Twin Lakes and the high amenity value of the site, planning students in the Humphrey Institute capstone seminar also suggested mixed-use

development that incorporated more housing, particularly around the Langton Lake area. This public input helped to shape the discussion about the next phase of redevelopment at Twin Lakes, and Roseville planners decided to alter the land-use plans to incorporate residential uses along Langton Lake.

The land-use plan for Twin Lakes that has been approved by the Roseville city council outlines a mixed-use, livable community that includes office, service, retail, and high-tech flex work spaces, as well as 500–700 units of new housing varying in density from 10 to 24 units per acre. The plans include two neighborhood centers, a workplace village, and a health and hospitality district where Roseville hopes to attract a medical office facility. In addition to a fine-grained street pattern designed to encourage greater integration of the mix of uses designated for the area, the plan also includes construction of Twin Lakes Parkway, which will connect the existing Terrace Drive to the Interstate 35W ramp at Cleveland Avenue.

Although the redevelopment of Twin Lakes is gaining momentum, there is still much work to be done. The master plan indicates the proposed future uses for each parcel in the area. One of the next steps is for the City of Roseville to encourage acquisition of sites by developers, or even to purchase sites itself (although properties in the area have been selling at somewhat inflated prices). Roseville could exercise its power of eminent domain to acquire properties, but the City currently does not intend to become a prime landholder in Twin Lakes.

Funding Brownfield Redevelopment. The City of Roseville has received three grants from the EPA totaling \$850,000 for use in Twin Lakes. The first was a pilot grant for property assessment and community outreach focusing on the future site of the Twin Lakes Parkway. The second was a brownfield cleanup revolving fund loan that can be used to pay for contamination remediation in the Twin Lakes area. The third grant was to conduct an areawide groundwater study of Twin Lakes. Other funding sources included \$75,000 from the Metropolitan Council for site planning, financial projections, and market studies.

The City established a Twin Lakes tax increment financing district in 1988 that will expire in 2014. During the first wave of redevelopment in Twin Lakes in

1994, TIF was heavily tapped to pay for the cleanup of the Arthur Street landfill, which was discovered when Ryan Companies redeveloped several sites as high-tech office space. However, TIF's power as a financing tool for Twin Lakes is steadily waning. At this point, there will not be enough time between groundbreaking on a potential TIF project and the expiration of the TIF district in 2014 to collect the increment necessary to fill the funding gaps in the project. In January 2003, Roseville applied for a special legislative remedy to allow for creation of new tax increment urban redevelopment districts and to authorize limited spending of increment from each district within the redevelopment area, because some development projects have a larger gap than others.

Residential Redevelopment at Twin Lakes. Today Twin Lakes is poised for redevelopment. A number of developers have expressed interest in the area, including Roseville Properties Management Company, which recently

submitted a proposal to the City of Roseville for a mixed-use development that includes 450,000 square feet of retail and office space and 500 market-rate housing units on two former trucking terminals. Although the market for office space has weakened since Roseville began its planning process, the housing market has grown stronger. At this point, it appears that the less traditional brownfield reuse—residential redevelopment—is likely to occur at Twin Lakes before the more typical reuses as commercial or industrial space.

In choosing to pursue residential redevelopment at Twin Lakes, Roseville has had to overcome a number of obstacles that are likely to confront any city that undertakes residential brownfield reuse projects. Several of these obstacles—and the strategies and tools Roseville used to overcome them—are discussed below.

The assumption that brownfields should be reused only as industrial sites or parking lots. Because most brownfields once hosted an industrial use,

people may come to think of the site as having only an industrial future. But risk-based corrective action (RBCA, or “Rebecca”), a policy that many states including Minnesota have adopted, makes it possible to clean up a site to a required level based upon the intended reuse of the land (industrial, office, or residential). Depending on the land use intended, specified levels of contamination are allowable in soil and groundwater; levels found to exceed those standards must be remediated to meet the standard.

Industrial, commercial, and office end uses are treated much less stringently than housing. Because most of the land around nonresidential buildings is typically covered with pavement, which provides a barrier to the contamination, and because workers largely remain inside the buildings and do not spend much time recreating on exposed soil as they might at home, far lower levels of remediation are required. Future housing sites require the highest level of cleanup due to the exposure



Photo by Steve Schneider

The original land-use plans for Twin Lakes have been altered to include housing along scenic Langton Lake. This use is more consistent with the residential character of the land north of the redevelopment site and provides Roseville citizens with access to one of the city's natural amenities.

levels long-term residents might be subjected to (potentially 72 years, 12 hours per day), as well as concerns that children could accidentally ingest polluted soil or other contaminants.

Because the degree of remediation required is determined by the future land use, master-planning of a redevelopment site is crucial to making the right economic decisions along the way. It would be prohibitively expensive (as well as unnecessary) to clean up all of Twin Lakes to residential standards, for example, because residential remediation standards are the most stringent and therefore the most difficult and expensive to meet. By remediating the nonresidential sites to commercial/industrial standards, the costs of remediation when distributed across the entire redevelopment area can be quite reasonable. In the case of Twin Lakes, careful planning for future uses kept the average cost for remediation across the entire site to between \$0.80 and \$1.20 per square foot.

The fear of unknown contamination, which can drive away potential developers. According to the EPA, brownfields are “abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or *perceived* environmental contamination” (emphasis added). By including perception in its definition, the EPA allows that there might be no actual contamination at all on a site generally considered to be a brownfield. Nonetheless, the mere suspicion of contamination might be enough to keep at bay otherwise interested buyers, developers, and municipalities who fear liability for future cleanup costs. In short, the perception of contamination—whether justified or not—can result in market behavior just as destructive as that engendered by actual contamination of the soil.

Because the issue of perceived contamination can play as much of a role in redevelopment as real contami-

nation, redevelopment often must be planned with contamination as a looming unknown. Knowing the former land uses on the site, the city or other redevelopment entity must assume there is contamination present and proceed by undertaking an environmental assessment of the site. With the help of an EPA pilot grant, Roseville has done just that. A good portion of the funding from EPA has been earmarked for extraction of soil borings and lab testing of soil samples from Twin Lakes. Some of those samples have indicated that contamination is present in the soil, but thus far the levels have been low enough not to require remediation. Because more serious contamination may nonetheless be present on areas of the site that have not yet been tested, the city has a brownfield revolving loan fund to offer to interested developers or land owners to help defray the costs of any cleanup required.

The EPA pilot grant also paid for extensive community outreach, which



Photo by Steve Schneider

The use of petroleum products and engine-cleaning solvents mildly contaminated the soil around the trucking terminals that formerly occupied the Twin Lakes redevelopment site. By cleaning up nonresidential redevelopment sites to commercial/industrial standards, the City of Roseville has kept remediation costs for the project as a whole quite reasonable.

allowed City of Roseville staff to educate the community about brownfield redevelopment and elicit comments from local business owners, residents, elected officials, and state and local agency representatives regarding what uses they wanted to see developed on the site. In spite of contamination concerns, housing consistently emerged as a strong component of the redevelopment project during all of these discussions. In the year and a half since the city council approved the Twin Lakes master plan, market demand for housing has actually resulted in more housing being added to the area around Langton Lake than was originally planned.

The risk that the city will be held liable for any contamination found. The Superfund approach of the 1980s and 1990s was an attempt to punish polluting landowners and make them pay for cleanup of degraded land in their charge. Today, EPA is taking a different tack. The agency has developed a competitive process for Brownfield Demonstration Assessment Pilot Grants of \$150,000 to \$200,000 to investigate contamination and draft cleanup plans. This approach is more appropriate for smaller brownfield sites than for Superfund-level cleanups, but the key factor is that the focus is on *remediation* rather than punishment. Roseville received a \$200,000 demonstration grant, which was instrumental in supporting the redevelopment process at Twin Lakes.

In the state of Minnesota, the Minnesota Pollution Control Agency (MPCA) runs the Voluntary Investigation and Cleanup program, which allows properties to register with the MPCA and receive letters indicating “no further action needed” once cleanup has been completed on a site, or “no association” (with contamination), which retroactively removes liability from the current property owner. A number of property owners in Twin Lakes have worked with MPCA and have received such letters. Given the voluntary nature of the program, the focus has clearly shifted away from punishment, which only succeeded in idling facilities and driving property owners into obscurity. The focus on redevelopment strategies instead allows cleanup funds to go to proactive property owners, who have access to more funding sources once MPCA removes from them any legal responsibility or liability for cleanup.

Today there is even contamination insurance available for purchase from select insurance firms. The insurance policy gives a city or other developer the ability to proceed on a site where the extent of contamination is uncertain and where ballooning remediation costs might otherwise sink the entire project. Roseville staff learned about the opportunity to buy such insurance, but will not consider purchasing it unless the City becomes a prime landowner itself at some point in the future.

The assumption that it is easier to develop greenfield sites on the urban fringe than deal with the complexities of brownfield redevelopment. During the last decade, the Twin Cities region has earned the dubious distinction of being one of the nation’s most sprawling metropolitan areas. Although development on the urban fringe may appear more attractive than navigating the uncertain terrain of brownfield redevelopment, the potential infrastructure costs associated with fringe development counsel against such a short-sighted view. A mixed-use development like Twin Lakes will make better use of the transportation infrastructure already in place than would any fringe community, and will provide much-needed housing, a range of skilled labor jobs, and proximity to the economic engine of the Twin Cities.

Beyond the addition of Twin Lakes Parkway, no new roads are needed to support Roseville’s business park, yet many multimodal connections are enhanced. The I-35W ramp at Cleveland Avenue is being reconfigured for safety and to link to the Twin Lakes Parkway. The express bus or light-rail line slated to run on the Northeast Diagonal through Ramsey County will have a regional transit stop or hub at Twin Lakes. Another proposed light-rail line from White Bear Lake to Minneapolis would likewise tie in perfectly with the Twin Lakes development. In addition, Roseville is already fully connected to sewer and water service and can readily support the proposed development at Twin Lakes without costly pipe extensions or new lines. All of these factors have helped to make Twin Lakes an attractive location for redevelopment.

The entire region benefits when new developments can plug into the existing transportation and sewer infrastructure as Twin Lakes does. Roseville will be adding hundreds of new households that will bolster the existing and proposed mass transit systems by

adding many new potential riders to an area within walking distance of key transit stops.

Minnesota: The Once and Future Brownfield Leader?

The field of brownfield redevelopment, particularly for residential reuse, is at a crossroads. For an industry where so little was known or understood that an esoteric vocabulary had to be developed to even begin to discuss it, we have come a long way in 10 years. Public officials, bankers, economic development specialists, and real estate developers have adapted to the challenges of brownfield redevelopment, and the human capital exists to proceed confidently with the successful redevelopment of formerly contaminated sites.

At EPA’s national brownfields conference in 2000, brownfields expert Charles Bartsch publicly touted Minnesota as one of the most progressive states in the nation for brownfield redevelopment. Unfortunately, state commitments to brownfield redevelopment began retrenching even before the economy soured following 9/11. The Minnesota State Legislature’s property tax reforms in 2001 jeopardized financing options for brownfield redevelopments in many Minnesota municipalities. Economic development experts were dismayed at the limits placed on tax increment financing. With municipal debt service now a top priority over new spending, tax increment districts are no longer a viable way to finance the revitalization of most brownfield sites. Likewise, the Minnesota Department of Trade and Economic Development’s Redevelopment Account grant, one of Minnesota’s largest brownfield redevelopment funding programs, was repealed during the 2002 legislative session. The demise of this program is a real blow to smaller municipalities that had intended to commence remediation efforts on local sites but cannot afford to do so without such assistance.

Based on Roseville’s experience with the Twin Lakes redevelopment project, it is possible to identify several policy changes that would assist inner-ring suburbs with their efforts to redevelop brownfields and encourage the metropolitan region to seek the highest and best uses of its land.

1. Allow new 25-year redevelopment TIF districts to be created. Considering how few state funding sources remain for brownfield rede-



Photo courtesy of City of Roseville Community Development Department

A regional brownfield redevelopment structure modeled on the fiscal disparities act would allow suburban communities to more equitably share the economic burden of brownfield redevelopment.

velopment, TIF is a critical brownfield tool. TIF needs to be adequately flexible to allow for pooled districts and permit cities to close and start new districts when necessary. Without TIF laws that work for inner-ring suburban communities, new redevelopment projects will continue to leapfrog to the developing outer-ring suburbs.

2. Recognize roads as economic development tools. Brownfield redevelopments generate new jobs for the region, but often require new roads to break up and provide access to the large parcels characteristic of former industrial sites. Ideally county and state aid would provide transportation finance assistance for the construction of such roads when a city can show the site will provide new jobs. When cities have to foot the bill for new roads on their own, the redevelopment process is further slowed.
3. Create a regional brownfield redevelopment authority for inner-ring suburban cities. Such an agency would be a regional entity for a regional problem. Today, an individual suburb is expected to bear all of the costs of a brownfield redevelopment

project, even though other municipalities will reap some of the benefits of that redevelopment. No one city by itself can adequately foot the bill for brownfield cleanup and redevelopment, but together cities can share the costs. One way to fund a regional agency would be to create a structure modeled on the Charles R. Weaver Revenue Distribution Act (commonly known as the fiscal disparities act), in which a select group of inner-ring suburbs would contribute a portion of their commercial and industrial tax revenues to a regionwide contamination fund that would then be redistributed among brownfield redevelopment projects in the participating suburbs.

4. Suburban brownfield redevelopment projects need the support of local elected officials in order to succeed. City-led redevelopment projects can span decades and require city council support over the long haul, from planning to groundbreaking. Leadership shown by elected officials encourages the public to become more actively involved in the planning process, leading to better outcomes. Given that the makeup of

suburban city councils will undoubtedly change over the course of a large-scale redevelopment project, general council support for the project allows city staff to maintain momentum.

5. Smart growth activists would be wise to support brownfield redevelopment efforts. Redeveloping potentially contaminated sites within the seven-county metro area advances the goals of smart growth advocates—less sprawl; more compact developments; better use of existing roads, mass transit, and sewers; a jobs-housing balance where workers can afford housing near their jobs; a cleaner environment; and less dependence on the automobile. Smart growth and brownfield advocates will find that their end goals are quite similar. If they can join together in coalitions, they will be able to consolidate their resources and lobby more effectively for permanent brownfield funding sources that contribute to smart growth efforts.

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Achievements of First-Generation Hmong Youth: Findings from the Youth Development Study

by Teresa Swartz, Jennifer C. Lee, and Jeylan T. Mortimer

Following the civil strife in Laos from 1960 to 1975, Hmong who supported the Royal Laotian government and aided the U.S. Central Intelligence Agency (CIA) in fighting against Pathet Lao forces fled their homeland for safety in the refugee camps of Thailand. Beginning in 1976, the United States began accepting Hmong refugees who had assisted the CIA in Laos. Since then, large numbers of refugees have settled in the Twin Cities through primary and secondary migration. Today, St. Paul is home to the largest urban Hmong population in the United States.

The transition to urban Minnesota has been challenging for Hmong adults who experienced a very different life as shifting subsistence farmers in the rural highlands of Laos. One of the poorest immigrant groups in the United States, the Hmong experience linguistic barriers and cultural differences and are characterized by an adult population with very little formal education; consequently, Hmong refugees have encountered difficult circumstances as they have settled into their new home. As with other immigrant groups, the Hmong hope for success in the United States, but because most adults lack experience in the postindustrial world, successful economic advancement may rest on the achievements of their children. The first generation of Hmong immigrant children have come of age in the United States, passing through American schools, beginning their work life, and starting their own families. The Youth Development Study, on which this article reports, has explored how these young Hmong people are faring as they embark on their adult lives. Findings indicate that family, community, and public resources have provided this generation of Hmong with a strong foundation for academic and potential career success.

We have been able to conduct the Youth Development Study due in part to the generosity of CURA, which provided financial support for this research starting in 1994 through its Faculty Interactive Research Program.



Photo by Robert Friedman

We received supplementary funding from the National Institute of Mental Health to conduct the survey of Hmong high school students and their parents, as well as funding from the MacArthur Foundation for interviews with these

Hmong research participants as young adults.

Research Sample

The Youth Development Study is an ongoing longitudinal study of youth



Photo by Steve Schneider

Despite low socioeconomic status, the absence of professional role models, and the difficulties they endured as children, Hmong youth in this study experienced very positive educational outcomes and had similar educational aspirations as their non-Hmong peers.

development focused primarily on education, work, family, and mental health. Started in 1987, when the respondents were in the 9th grade, the study has followed these high school students as they have transitioned into adulthood. The sample consists of 1,105 respondents chosen randomly from a list of enrolled 9th-grade students in the St. Paul Public School District. Although there have been demographic shifts in Minnesota generally and the school district specifically during the past decade, the sample is representative of the cohort of students attending St. Paul public high schools during the late 1980s and early 1990s. A total of 9% of the students and 9% of the sample were Hmong. Of the non-Hmong respondents, 74% were White, 10% were Black, 5% were Latino/Latina, and 11% were from other ethnic backgrounds.

In spring 1988, 105 Hmong students (56 boys and 49 girls) completed the survey. The panel of students were surveyed each year from 9th through 12th grades, and follow-up surveys of students have been conducted by mail annually since high school graduation. In addition, parents were surveyed while the respondents were in high school and a subsample of participants was interviewed in adulthood. It is

important to note that although all of the respondents were in the 9th grade when first surveyed in 1988, they were not necessarily the same age. Whereas 94% of non-Hmong students were 14 or 15 in the first wave of the study, only 58% of the Hmong were this age. Some 29% of the Hmong respondents were 16 or 17 and 10% were 18–21 years old when they first completed the questionnaire in the 9th grade. All of these Hmong youth are first-generation immigrants to the United States. A majority lived for a substantial portion of their childhood in Southeast Asia, many spending some of their adolescence there as well. Of the Hmong respondents, 61% moved to Minnesota after 1980 and one-third arrived after 1983. Although some relocated to Minnesota from other areas of the United States, most came directly from refugee camps in Thailand. Additionally, subsamples of Hmong respondents were interviewed in 1995, 1997, and 2002.

There was significant attrition among the Hmong respondents following high school, which makes it difficult to come to definitive conclusions based on the survey results. Although we have not found any consistent patterns of continued participation in the study by some Hmong

youth and not others, the survey findings must be interpreted with caution. The annual surveys have been supplemented with a limited number of individual and focus group interviews to gain a better understanding of the young people's current situations and their subjective understandings of their experiences. It is important to note that these respondents were in high school more than 10 years ago and their experiences may differ from that of Hmong high school students today. Few of the Hmong respondents in the Youth Development Study were born in the United States and many came to the country as older children. In contrast, most Hmong high school students today were born here or have spent most of their childhood in the United States.

Characteristics of Hmong Youth

Family Background. The experience of civil war and the subsequent flight from Laos took a heavy toll on the Hmong families we studied. During recent interviews, these young Hmong people recalled memories of fleeing Laos as children, losing parents, siblings, or other relatives along the way, and remembered the impoverished living conditions in the refugee camps of Thailand. In large part because of casualties of war and postwar conditions, the majority of Hmong youth in our study come from households with one or more parent missing. Only 47% of the Hmong youths lived with their biological father. Most Hmong parental absence was due to death, whereas most parental absence among the non-Hmong respondents was due to divorce (58% of non-Hmong youths lived in households without their biological father, although many live with a stepfather).

It is clear that the Hmong young people faced many additional disadvantages once they arrived in the United States. In particular, their parents had lower levels of formal education and higher rates of unemployment than the parents of their non-Hmong peers, and were much more likely to live in poverty. As was typical in Laos, Hmong fathers received an average of only two years of formal education and most mothers had received no education in their homeland. Prior to emigrating to the United States, most of the parents of the Hmong youth in this study were rural farmers in Laos. Thus, they came to the Twin Cities area with knowledge and skills that were not easily transferable to

Table 1. Educational Achievement of Hmong and Non-Hmong Respondents

	Hmong (%)	N	Non-Hmong (%)	N
Educational aspirations		102		931
High school or less	4.9		4.2	
Community college	17.6		18.6	
Bachelor's degree	22.5		27.3	
Master's degree or higher	48.0		42.2	
Don't know	6.9		7.7	
On-time high school graduation	89.9	79	83.9	812
Highest level of education (1998)		47		757
Less than high school	4.3		2.2	
High school diploma or G.E.D.	17.0		26.8	
Two-year degree or some college	32.0		42.4	
Bachelor's degree or higher	36.2		24.7	
Other	8.5		3.8	

Note: None of these differences in outcomes are statistically significant.

the urban Minnesota labor market. Only 28% of the Hmong fathers and 14% of Hmong mothers worked outside the home while their children were in high school (compared to 91% of non-Hmong fathers and 79% of non-Hmong mothers who were employed outside of the home). Those who were employed worked primarily in low-paying service and manufacturing jobs. Consequently, 62% of Hmong households had incomes under \$10,000 (1988) and 87% of Hmong families lived in poverty based on federal poverty guidelines.

Given Hmong adults' low employment rates and the lack of formal education needed for well-paying urban jobs, it appears that the economic situation of the Hmong rests on the success of the younger generation. Indeed, parental investment in and encouragement of their children's academic achievement suggest that they have looked to the next generation's educational attainment as the hope for future financial stability and mobility. However, low income, low levels of parental education, and

cultural dissimilarity from educational institutions traditionally have been associated with lower levels of school success among children in the United States. One question we set out to address in this study is whether Hmong students in St. Paul have been able to overcome these serious disadvantages and to achieve academically. Future Youth Development Study efforts will examine whether educational attainment can be leveraged into economic success for these young Hmong people as they move from school to work in their transitions to adulthood.

Educational Achievement. The Youth Development Study has found very positive educational outcomes for Hmong youth despite the difficulties they experienced as children in Southeast Asia and in the United States. Despite their low socioeconomic status and the absence of professional role models within their families, Hmong students had similar educational aspirations as their non-Hmong counterparts in high school, hoping that they would

attain between a four-year bachelor's degree and a master's degree. Table 1 shows the educational aspirations and achievements of Hmong and non-Hmong youth.

To realize their aspirations in the face of challenging circumstances, Hmong high school seniors spent much more time on homework than non-Hmong seniors, studying an average of 21 hours per week versus the average 8 hours per week spent on homework by their non-Hmong classmates. This hard work seems to have paid off for these Hmong youth. Hmong high school students reported a grade point average of 3.05 during their senior year, which was significantly higher than the non-Hmong reported grade point average of 2.77. In addition, Hmong students graduated from high school on time at a similar rate as their non-Hmong peers. By 1998, the Hmong had higher levels of educational attainment than the non-Hmong, with more respondents having earned a bachelor's degree. Because many respondents have continued to report that they were engaged in furthering their education, it remains to be seen how Hmong educational attainment will eventually compare with the non-Hmong in their cohort. Now that the respondents are entering their 30s, it may be possible to analyze educational outcomes in upcoming waves of this study.

Given the high degree of academic success of Hmong youth observed thus far, it appears that something else may be operating in Hmong households that compensates for the typically negative academic consequences of poverty, low parental education, single-parent households, and teen parenthood. Part of the educational success of Hmong students may be linked to the abundant support and high academic expectations of their parents. On average, Hmong 9th and 10th graders believed their parents wanted them to attain between a bachelor's and master's degree, whereas non-Hmong students thought their parents wanted them to achieve a bachelor's degree on average. Additionally, 73% of Hmong parents did not want their children to work during the school week in high school, even if this meant reducing family funds, whereas the rest thought that their children could work as long as they continued to do well in school. Interviews with Hmong respondents conducted when they were young adults suggest that their parents were less supportive than the non-Hmong



Many students said their parents motivated them to excel academically by impressing upon them the importance of education as a path to success.

parents of after-school or extracurricular activities, sports, and socializing when they were in high school, in part because their parents were worried that these activities would interfere with academic performance.

These interviews also revealed that Hmong young adults felt their parents' expectations and support positively influenced their school success. For example, one respondent emphasized how his parents pressured him toward academic achievement.

My mom [was] always saying, "Son, you have to go off to college . . . and learn as much as you can." And in a way I did not have a choice. They always keep pushing you and they always [say] education is really important and . . . they always question you, "Hey, how come you

didn't bring any homework today?" You know, they always ask you questions and they would push you and push you and push you, and I think that's why I had the success that I did in high school.

Like this respondent, many others said that their parents impressed upon them the importance of education as a path toward success. This is especially striking given the fact that very few Hmong parents had received more than two years of formal education themselves. However, the understanding that education provides privilege, power, and upward mobility was most likely developed in Laos prior to arriving in the United States, because parents saw that education conferred high status to a few Hmong families.¹ Because virtually all Hmong parents had high educational

expectations for their children, it is difficult to empirically discern the effect of parental educational expectations on actual Hmong educational achievement. However, it is apparent that many of the Hmong respondents believed parental support for education, whether expressed as encouragement or pressure, was important in motivating their academic efforts.

Furthermore, Hmong respondents found their peers to be important positive influences on their educational success. For example, when asked what aspect of high school was especially influential in achieving success, one respondent stated, "I had [Hmong] friends who were academically oriented, and of course if you are in that crowd,

¹ Dao Yang, *Hmong at the Turning Point*. Brooklyn Center, MN: Worldbridge Associates, 1992.

you will aspire to be like others. . . . Because I wanted to do well, because of my social group, I took college prep classes." Several others who had been particularly successful academically likewise cited their friends as encouraging their school achievement.

Special educational initiatives also promoted Hmong students' educational attainment. In interviews conducted in 2002, Hmong respondents credited St. Paul Public School programs, such as those that assisted with their English language skills and supported them as teen mothers, as important to overcoming major obstacles and achieving academically. Interview findings suggest that Hmong respondents attribute their postsecondary educational attainment in part to college programs designed to serve underrepresented minorities such as Southeast Asians, as well as faculty members and school programming that attend to diversity issues. This was the case for those who attended vocational schools as well as those who attended four-year colleges and universities.

Labor Force Participation. Despite their greater involvement and success in the educational system, a lower proportion of Hmong respondents have participated in the labor force, both during and after high school. The lower likelihood of employment during high school may be explained by the Hmong emphasis on education and parental restrictions on adolescent work. However, even a year after graduating high school, fewer Hmong were employed than non-Hmong. The differences were greatest among men. Hmong males spent significantly less time working in a full-time job and more time unemployed than non-Hmong men. For those who were employed, the median annual income for Hmong respondents was significantly less than that of the non-Hmong.

Because Hmong youth were less likely to work while in high school, their lower levels of full-time employment and the relatively low incomes of those who do work could be attributable to their lack of previous work experience or connections to jobs. In addition,

because their parents are much more likely to be unemployed, they may lack knowledge of the job market and connections to the kinds of networks that often aid people in securing employment. On the other hand, because a higher percentage of Hmong were enrolled in postsecondary education after finishing high school, their lower young-adult labor force participation rates could reflect their stronger emphasis on education. It remains to be seen whether the differences in employment will persist once they have completed their schooling.

Adolescent Marriage and Childbearing. Hmong family formation patterns and life course transitions differ from those of many of their non-Hmong peers. Traditional Hmong culture embraces relatively early marriage and childbearing, especially among females. Although attitudes about the timing of marriage and parenthood may be changing in younger cohorts, the cultural practice of early marriage appears to be resilient among the young Hmong people participating in this



Photo by Steve Schneider

Despite their educational success, fewer Hmong respondents were employed during or after high school than their non-Hmong peers.



Photo by Robert Friedman

Traditional Hmong culture stresses early marriage and childbearing, a fact borne out by this study. Hmong females were more likely to be married and to have at least one child than their non-Hmong peers. Nonetheless, graduation rates and educational attainment for married Hmong young women and teen mothers were remarkably high, findings at least partly attributable to the availability of extended family to provide childcare.

study. By the time the respondents were in their senior year of high school, a significantly greater proportion of Hmong females were married. They were also much more likely than non-Hmong females to have at least one child. Among Hmong girls, 70% married by the end of high school and more than half reported they had at least one child at home (compared to the 0.7% percent of non-Hmong girls who were married in

high school and 10% who had children). These numbers may actually underrepresent Hmong marriage and parenthood during high school because many Hmong become “culturally married” through a Hmong traditional ceremony but do not attain a marriage license, and thus may not report on a survey sponsored by a state university that they are married.

Although adolescent childbearing typically has been associated with poor

educational performance and attainment outcomes, this same relationship does not exist for Hmong teen parents. Unlike other ethnic groups, Hmong girls who had children in high school did not perform poorly, nor did they have lower educational aspirations prior to getting married or becoming pregnant. The majority of Hmong females who were married in high school graduated along with the rest of their class, whereas the non-Hmong females who were married typically did not graduate on time. Indeed, several Hmong young women who were married and had children in high school pursued postsecondary education.

In comparison to other ethnic groups in the United States, graduation rates and educational attainment for married Hmong young women and teen mothers are remarkably high. We have found that their continued school success is likely due to family and community support mechanisms that enabled them to achieve academically. Focus groups and individual interviews revealed that many young Hmong mothers believe their parents and in-laws to be invaluable sources of support as they complete their studies and launch careers. Although they certainly relay feelings of stress from gaining new family responsibilities—including cleaning, cooking, child-rearing, and obligations to extended kin—they also say that family members help them out. Most notably, many young mothers discuss how their nonworking parents or in-laws are available to take care of their children while they study or work. Government assistance to Hmong refugees enabled Hmong parents to remain home to care for their grandchildren while their adult children continued to pursue their education and, eventually, their careers. One Hmong woman, currently an elementary school teacher who had her first child when she was a sophomore in high school, explained why she thinks she was able to complete high school and eventually earn a master's degree, whereas other teen mothers dropped out of school.

With me I have the support at home. A lot of women, once they have kids they don't have someone to babysit. I was fortunate that my mom watched the kids while I went to school. That helped a lot.

Because marriage and childbearing during adolescence and early adulthood

were normative within the Hmong culture (although this may be changing), young Hmong women received continued support once they became mothers and did not experience education and parenting as incompatible roles.

Additionally, because the financial stability of the entire extended family is often understood to rest on the educational and subsequent occupational attainment of the younger generation, there is a shared investment in the children's education and early work careers. For example, one Hmong woman whose mother babysat while she began working stated, "I think most Hmong parents lack the financial resources, so they tend to help out with childcare so the younger couple can work and be economically successful." Despite this, some young Hmong mothers indicated pressures from husbands and in-laws to refrain from pursuing educational interests to focus primarily on their family responsibilities. However, on the whole, young Hmong mothers in this study have experienced a cushion of practical and emotional support that has enabled them to achieve academically and develop career paths. From these Hmong women's experiences we learn that adequate support systems can promote positive life transitions and outcomes even when they are outside of the "mainstream" normative model.

Because Hmong marriage patterns often involve an older male and younger female, fewer Hmong boys were married or became parents while still in high school. However, Hmong male life-course patterns differ from those of their non-Hmong peers as well. Young Hmong men's lives are not characterized by lack of direction or drift. Instead, Hmong men in our study engage in postsecondary education at higher rates than other youth. In future years we will assess whether the investment in education by Hmong men will result in successful careers and upward mobility.

Conclusions and Policy Implications

The Hmong refugee population in the Twin Cities has demonstrated tremendous resilience in adapting to a very different life in urban Minnesota. Hmong refugees came to the United States with few economic resources, a different language, a unique culture,

and carrying the harsh memories of war and loss. Yet in spite of this, the investment of nuclear and extended family resources on the young within the context of a strong Hmong community, and the support of institutions such as schools and social welfare systems, have promoted the academic achievement of Hmong children.

Reflecting upon their educational experiences, Hmong young adults interviewed in 2002 credited St. Paul Public School English language instruction and programs aimed to support teen mothers as instrumental to their academic achievement. Several Hmong young adults attributed their educational attainment in vocational and four-year colleges to formal and informal programs and assistance for underrepresented minorities, such as recruiting, financial aid, and academic and social support. Such educational programs should continue in order to advance the academic and occupational success of Hmong young people, as well as other immigrant youth and students of color. In interviews, young Hmong adults expressed a feeling of economic and cultural obligation to the wider kin group that could enhance their motivation for educational and career success and the advancement of the Hmong community as a whole. Future Youth Development Study efforts will explore whether their educational attainment will ultimately advance the work lives and economic success of Hmong individuals, as well as the Hmong community more broadly.

From this study, it is also evident that Hmong adolescence and the transition to adulthood take distinct forms. For example, early marriage and teen childbearing have not had the same negative educational consequences for Hmong young women as they have for non-Hmong young people, in part because of the family and community supports that Hmong youth experience. From this, we learn that successful outcomes for youth do not necessarily derive from the same sources and life paths. In the case of the Hmong, family, community, institutional, and public social supports can collaborate to promote positive results for young people. Given the growing prevalence of immigration and the increasing diversity of the American population, it is imperative that investigators continue to study the experiences and adaptation of each

new immigrant group. Each immigrant group's adolescence and transition to adulthood may have its own distinctive features and implications for the institutions and policies designed to enhance the well-being of all Americans.

Teresa Swartz is a National Institute of Mental Health–National Research Service Award (NIMH-NRSA) postdoctoral fellow in the Department of Sociology at the University of Minnesota and is affiliated with the University's Asian American Studies Initiative. She joined the Youth Development Study in 2002. She received her Ph.D. in sociology from the University of California at San Diego in 2001. Her current research focuses on foster care, welfare and civic participation, and family support in the transition to adulthood.

Jennifer C. Lee is a graduate student in the Department of Sociology at the University of Minnesota and is data analyst for the Youth Development Study, which she joined in 2002. Her current research interests are in education and the acculturation processes of immigrant and second-generation Asian American youth.

Jeylan T. Mortimer is professor of sociology at the University of Minnesota and director of the Life Course Center. She has served as principal investigator for the Youth Development Study since its inception in 1987. She is currently studying the effects of adolescent work on the timing and patterning of markers of transition to adulthood. Her recent books include *Adolescents, Work and Family: An Intergenerational Development Analysis* (with Michael Finch) and *Working and Growing Up in America* (Harvard University Press, 2003).

This research was supported by grants from the Faculty Interactive Research Program at CURA, the MacArthur Foundation, the National Institute of Mental Health, and the National Institute of Child Health and Human Development. The authors are indebted to Professor Tim Dunnigan of the Department of Anthropology at the University of Minnesota as well as Professor Ray Hutchinson of the Department of Sociology at the University of Wisconsin at Green Bay for their early direction and subsequent consultation on this project. They are also grateful to the St. Paul Public Schools for their participation in this university-community partnership, which has made this research possible.

Patrick Brezonik Appointed to Fesler-Lampert Chair in Urban and Regional Affairs

Patrick Brezonik, professor of civil engineering and director of the Water Resources Center, has been named to the Fesler-Lampert Chair in Urban and Regional Affairs for 2003–2004. Brezonik's appointment, which was announced in April, was made by Victor Bloomfield, Interim Dean of the Graduate School and Vice Provost for Research, based on recommendations from CURA.

When asked for his reaction to the announcement, Brezonik replied that he was "elated" to learn of his selection. "Awards like the Fesler-Lampert professorship separate great universities from ordinary ones," he explained. "It is very rewarding to be recognized by one's peers as worthy of a chaired position." Brezonik noted that the Fesler-Lampert endowment "provides a wonderful opportunity for the university to encourage and support scholarship on urban and regional issues by its senior faculty. Time is one of the most precious commodities that faculty have, and the financial support that the endowment provides offers the all-too-rare opportunity to have focused time to spend on research and scholarly activities that are not driven by specific grant requirements."

The Fesler-Lampert Chair in Urban and Regional Affairs is one of four endowed chairs and two named professorships made possible through a generous contribution to the University of Minnesota by David R. and Elizabeth P. Fesler. The Fesler-Lampert Endowment in Interdisciplinary and Graduate Studies was initially established in 1985 through a \$1 million grant from the David R. Fesler Fund of the Saint Paul Foundation, Inc. The gift was matched by a \$1 million allocation from the Permanent University Fund, and the combined endowment and matching funds have now grown in value to more than \$9.5 million. The endowment is intended to stimulate interdisciplinary research and teaching through the appointment of distinguished, broadly learned scholars to endowed faculty

positions at the University of Minnesota.

Tom Scott, director of the Center for Urban and Regional Affairs, said that CURA is "pleased to add Professor Brezonik's name to the list of holders of the Fesler-Lampert Chair in Urban and



Photo by Steve Schneider

Patrick Brezonik

Regional Affairs." Scott noted that Brezonik has "a long and distinguished record of research and teaching at the University of Minnesota, in addition to his significant contributions as the director of the Water Resources Center." According to Scott, Brezonik's current research, which involves the application of satellite imaging technology to measure the impact of human policies and behavior on urban water quality, "fits well with CURA's long-standing concern for environmental quality and the development of technologies for the analysis of land-use change."

After earning his Ph.D. in water chemistry from the University of Wisconsin at Madison, Brezonik taught in the Department of Environmental Engineering Sciences at the University of Florida at Gainesville for 15 years

before coming to the University of Minnesota in 1981. Among his many professional activities and accomplishments, Brezonik has served as a member of the National Academy of Sciences–National Research Council Water and Science Technology Board; a National Science Foundation faculty fellow and guest professor at the Swiss Federal Institute for Environmental Science and Technology (EAWAG-ETH) in Zurich; a member of the research council for the Water Environment Research Foundation; director of the Water Resources Center at the University of Minnesota; and director of graduate studies for the University's Water Resources Science program, which he cofounded. He has written, edited, or coauthored more than 150 articles, books, and papers on a broad range of topics in the areas of aquatic chemistry, limnology, biogeochemistry, and surface water quality.

Brezonik plans to use the resources provided by his appointment to continue work on two related projects: the application of satellite imagery and other advanced remote-sensing technology to improve capabilities for monitoring and assessing water quality in Minnesota lakes, and developing conceptual and simulation models that show how humans affect the cycling of major biogeochemicals such as carbon, nitrogen, and phosphorus in urban ecosystems. Both areas of study attempt to quantify how human activity—particularly urban activity—impacts ecological systems. He also expects to develop a new graduate seminar on regional and global biogeochemical cycles.

The Fesler-Lampert Endowment is intended as a tribute to David Fesler's grandfathers, Bert Fesler and Jacob Lampert. The Fesler-Lampert Chair in Urban and Regional Affairs is appointed for a one-year period, and receives approximately \$45,000 for research, salary, and logistical support. The funds are jointly administered by the University of Minnesota Foundation and the University of Minnesota.

Project Awards

To keep our readers up-to-date about CURA projects, each issue of the *CURA Reporter* features a few capsule descriptions of new projects under way. The projects highlighted in this issue are made possible through the Neighborhood Planning for Community Revitalization (NPCR) program at CURA. These projects represent only a portion of those that will receive support from CURA and its partners during the coming year.

■ **Affordable Housing on the East Side.** The need is growing for quality affordable housing for low-income families with children attending area community schools in the St. Paul East Side communities of Dayton's Bluff and Payne-Phalen. A graduate student in public affairs at the University of Minnesota is working with Dayton's Bluff Neighborhood Housing Services to identify affordable apartments and low-income housing on the East Side; conduct a survey on expiring use controls, retiring owners, and low-income tax credits; and develop a list of properties for use by housing organizations to intervene in order to preserve affordability.

■ **Update MCNC Environmental Inventory.** The Mississippi Corridor Neighborhood Coalition (MCNC) is a neighborhood-based coalition of 20 community groups that represent low-to moderate-income households from a diverse population located primarily in north and northeast Minneapolis. The organization's activities include environmental issues, land-use planning, and neighborhood revitalization in the Upper Mississippi River corridor. An undergraduate student in natural resources from the University of Minnesota is helping to update an environmental inventory on current sources of water, land, and air pollution in the river corridor.

■ **Minneapolis Neighborhood Information System.** Minneapolis neighborhood organizations are using property databases and GIS software with parcel-level information to help plan, develop, and evaluate housing programs and strategies. East Phillips, Elliot Park, Hawthorne, Harrison, Holland, Longfellow, Near North, Powderhorn Park, St. Anthony

West, Seward, Standish-Ericsson, and Whittier neighborhoods are interested in learning new applications of GIS technology that include data-display and data-analysis. A graduate student at the University of Minnesota's Humphrey Institute of Public Affairs is working on general capacity building efforts by training and supporting neighborhood staff in GIS use, GIS analysis, and database utilization.

■ **Neighborhood Funding Trends.** Neighborhood organizations are an important part of Twin Cities urban planning and development. With public funding undergoing massive changes, it is unclear how much financial support there will be in the future for these organizations. The Minneapolis Center for Neighborhoods, in partnership with representatives from a range of Minneapolis and St. Paul community councils and neighborhood organizations, is conducting three case studies to explore what makes a cross section of neighborhood organizations successful in attracting resources. A graduate student in public affairs from the University of Minnesota is helping to identify neighborhood organizations that have successfully secured private funding to support revitalization efforts. An assessment of how private funding has been affected by public funding decisions is also being conducted. Results will be shared during a workshop and a report will be provided to all neighborhood organizations, funders, city officials, and others.

■ **Lyndale Neighborhood Revitalization Program Evaluation.** The Lyndale Neighborhood Association (LNA) works to build community by strengthening the safety, stability, ownership, and investment of residents, institutions, and the neighborhood as a whole. Lyndale has completed its first phase of the city-sponsored Neighborhood Revitalization Program Plan and is documenting how well LNA accomplished the goals set out in the plan and the dollars and resources leveraged. An undergraduate student in political science at the University of Minnesota is helping to conduct the community-wide participatory evaluation and organize focus groups. The plan review will be used to improve LNA organiza-

tional effectiveness and to strengthen initiatives.

■ **Hmong Business Development on the East Side.** Neighborhood Development Company (NDC) assists inner-city communities achieve economic growth. The organization provides financing, educational classes, and technical assistance to those businesses that complete a 16-week training course. The NDC works closely with 11 Twin Cities' community development corporations in some of the Twin Cities metro area's poorest neighborhoods and with the for-profit Western Initiatives for Neighborhood Development (WIND). A graduate student in business at Hamline University is working with NDC to assess the economic, social, and community impact of Hmong businesses and a growing Hmong population on St. Paul's East Side. The student will assist with development of a Hmong demographic assessment, interviews with residents and businesses, and creation of marketing approaches and strategies.

■ **African American Business Development in Selby/Dale.** An undergraduate student in business at the University of St. Thomas is helping the Neighborhood Development Company (NDC) to assess the economic, social, and community impact and business potential of the African American community in the Selby/Dale area. The student is assisting with an assessment of current and potential African American investment and secondary marketing research on previous business models that have been used to stimulate the creation of African American-owned businesses.

■ **Latino/Latina Business Development on the East Side.** An undergraduate student studying business at St. Thomas is helping the Neighborhood Development Company (NDC) assess the economic, social, and community impact of Latino/Latina businesses and a growing Latino/Latina population on St. Paul's East Side. The student is helping to conduct a demographic assessment, which includes interviews with neighborhood Latino/Latina residents and businesses. The student will also help to develop business marketing approaches and strategies.

New Publication

CURA Update 2002. Edited by Michael D. Greco. Minneapolis: Center for Urban and Regional Affairs, 2002. CURA 02-4. Free.

This latest installment of the *CURA Update* includes capsule descriptions of the hundreds of projects, programs, and activities sponsored by the Center for Urban and Regional Affairs from 1999 to 2002, as well as the many project-related publications and reports issued by CURA and our partners during the same period. The new easy-to-use design makes it simple to locate projects on particular topics and to identify CURA publications associated with specific projects of interest. A comprehensive introduction to CURA's approach to community-based research, this publication is also an invaluable reference tool for nonprofit organizations, government agencies, students and faculty, libraries, and private citizens concerned with public policy issues in Minnesota. Available online as a PDF file at <http://www.cura.umn.edu/publications/update02.pdf>. To order a hardcopy of this free publication, please complete and return the order form below or contact CURA at 612-625-1551 or cura@tc.umn.edu.

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