The Nutritional Quality of Donated Food

Also Inside:
• Job Loss in Paper Mills in Minnesota and Maine
• Agricultural Changes and Depopulation in Nonmetropolitan Minnesota
In This Issue:

- The Nutritional Quality of Foods Donated by Individuals to the Emergency Foodshelf Network .................................... 3
- Job Loss in Paper Mills in Minnesota and Maine .................... 8
- Project Assistance Available from CURA ............................ 13
- Recent Project Awards .................................................. 14
- Resilient Communities Project Partners with Rosemount to Advance Community Sustainability ......................... 15
- Agricultural Changes and the Depopulation of Nonmetropolitan Minnesota ...................................................... 16
- CURA:Tech—A Civic-Technology Incubator .......................... 21
- Program and Staff Updates ............................................. 22

The Nutritional Quality of Foods Donated by Individuals to the Emergency Foodshelf Network

by Megan Harrison, Lisa Harnack, and M. Susie Nanney

ABSTRACT: Millions of Americans experience food insecurity and rely on food assistance programs, such as food pantries, to meet their needs. This study examined the nutritional quality of food donated by individuals to the Emergency Foodshelf Network (EFN), a major food bank in Minneapolis. The USDA Health Eating Index 2005 was used to score the nutritional quality of foods compared to the 2005 Dietary Guidelines for Americans. The study found EFN scored 67.0, which is well above the average (mean) score of 57.2 for the diet of American adults. Results from this study suggest that adopting a nutrition policy for donated foods at food shelves and food banks could improve the nutritional quality of available foods. The research upon which this article is based was supported by a grant from CURA’s Faculty Interactive Research Program.

Most Americans are not concerned with where they will get their next meal. However, for millions of American families, the ability to afford the next meal is not so certain. Although the United States is one of the wealthiest countries in the world, many families here experience food insecurity. Food insecurity has been defined as the limited or uncertain availability of nutritionally adequate and safe foods, or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.1 In 2011, 14.9% of U.S. households (50.1 million Americans) experienced food insecurity.2 Food insecurity is often caused by an event that strains resources and stresses a family’s household budget, such as the loss of a job or employee benefits, high housing costs, gaining a household member, utility costs, homelessness, healthcare or medication expenses, substance abuse, or childcare costs. As a result, families are forced to make difficult decisions between buying food or spending money on other needs. Families must look for other ways to acquire food if they do not have the means to afford it themselves, including participating in a federally funded food assistance program (such as the U.S. Department of Agriculture’s [USDA] Supplemental Nutrition Assistance Program) or seeking food assistance from emergency food providers within their communities (such as food pantries, emergency kitchens, and shelters). In 2011, the USDA estimated that 6.1 million households (5.1%) obtained emergency food from a food pantry at least once.3

Food insecurity can have serious consequences on individuals and families within our communities, including psychological suffering, disturbances within family relationships, and physical ailments such as hunger, malnutrition, and chronic diseases. Adults in the United States who have inadequate access to food have been found to generally have less healthy diets than those who are food secure.4 Overweight and obesity, which are major problems in the United States today, are also more prevalent among those who are food insecure.5 As a result of the health disparities that exist between food-secure and food-insecure households, many agencies and organizations that provide food assistance to food-insecure individuals to the Emergency Foodshelf Network and many other agencies that provide food assistance to food-insecure families are interested in supporting healthy eating habits among those they serve.

households are interested in supporting healthy eating habits among those they serve.

The Emergency Foodshelf Network, Inc. (EFN) in Minnesota is one such organization. EFN is an innovative food bank that provides food and support services to community partners, including food shelves, on-site meal programs, and Fare for All sites throughout Minnesota. It procures food through a bulk-purchasing program, corporate donations, and donations from individuals. In 2008, EFN implemented a healthy-foods policy to guide the types of food that entered its programs and were distributed to clients. The healthy-foods policy seeks to procure and distribute foods in accordance with recommendations from the USDA Dietary Guidelines for Americans. For example, the policy states that at least 95% of the items purchased through EFN’s bulk-purchasing program must meet EFN’s definition of nutritious foods.

In the work reported here, researchers at the University of Minnesota created a partnership with EFN to assist it in evaluating the nutritional quality of the foods it receives from individuals in the community who make food donations. The primary aim of this study was to evaluate the nutritional quality of foods donated to EFN through individual donations using the USDA’s 2005 Dietary Guidelines for Americans as the benchmark. We also assessed the proportion of foods donated by individuals that were past their expiration or “best used by” date at the time of donation. This secondary aim is meant to ensure the safety of the foods EFN supplies, as well as the dignity of those needing food assistance.

Methodology
To evaluate the nutritional quality of the foods donated by individuals to EFN, we systematically sampled donated foods once a week at EFN from mid-October to mid-December 2012 for a total of six visits. EFN is a centralized food bank where individual donations are made in-person or through community-led food drives. On scheduled data-collection days, EFN made three completed pallets of assorted boxes of donated foods available to our research staff. Because of the volume of donations, and because of limited access to boxes due to their arrangement on pallets, we used a systematic sampling technique.7 We inventoried all foods in each sampled box. We took a photograph of the front of the package of each sampled food item to identify the product name and package weight/size. For unusual or unique items, we also took a picture of the ingredients statement and nutrition-facts panel. We examined all sampled foods for expiration or “best used by” dates, and recorded these dates for products with

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6 Fare for All is a discounted grocery program made possible through EFN’s bulk purchasing where individuals can save money on grocery purchases at select Fare for All sites.

7 We conducted the systematic sampling by tallying the number of food boxes on top of each pallet (N) and dividing by the desired sample size (n = 8 boxes) to determine the sampling interval (k). If the sampling interval was not a whole number, we rounded the value for k up or down on alternative data-collection days.
Table 1. Healthy Eating Index-2005 Components and Standards for Scoring

<table>
<thead>
<tr>
<th>Component</th>
<th>Maximum Score</th>
<th>Standard for Maximum Score</th>
<th>Standard for Minimum Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total fruit (includes 100% fruit juice)</td>
<td>5</td>
<td>≥0.8 cup/1000 kcal of total menu</td>
<td>No fruit</td>
</tr>
<tr>
<td>Whole fruit only</td>
<td>5</td>
<td>≥1.4 cup/1000 kcal of total menu</td>
<td>No whole fruit</td>
</tr>
<tr>
<td>Total vegetables, including potatoes</td>
<td>5</td>
<td>≥1.1 cup/1000 kcal of total menu</td>
<td>No vegetables</td>
</tr>
<tr>
<td>Dark-green and orange vegetables</td>
<td>5</td>
<td>≥0.4 cup/1000 kcal of total menu</td>
<td>No dark-green or orange vegetables</td>
</tr>
<tr>
<td>Total grains</td>
<td>5</td>
<td>≥3.0 oz/1000 kcal of total menu</td>
<td>No grains</td>
</tr>
<tr>
<td>Whole grains</td>
<td>5</td>
<td>≥1.5 oz/1000 kcal of total menu</td>
<td>No whole grains</td>
</tr>
<tr>
<td>Milk/dairy</td>
<td>10</td>
<td>≥1.3 cup/1000 kcal of total menu</td>
<td>No milk/dairy</td>
</tr>
<tr>
<td>Meat and legumes</td>
<td>10</td>
<td>≥2.5 oz/1000 kcal of total menu</td>
<td>No meat or legumes</td>
</tr>
<tr>
<td>Oils (nonhydrogenated vegetable oils and oils in fish, nuts, and seeds)</td>
<td>10</td>
<td>≥12 grams/1000 kcal of total menu</td>
<td>No oil</td>
</tr>
<tr>
<td>Saturated fat</td>
<td>10</td>
<td>≤7% of total menu kcal</td>
<td>≥15% of total menu kcal</td>
</tr>
<tr>
<td>Sodium</td>
<td>10</td>
<td>≤0.7 gram/1000 kcal of total menu</td>
<td>≥2.0 gram/1000 kcal of total menu</td>
</tr>
<tr>
<td>Calories from solid fat, alcohol, and added sugar (SoFAAS)</td>
<td>20</td>
<td>≤20% of total menu kcal</td>
<td>≥50% of total menu kcal</td>
</tr>
</tbody>
</table>

a date that was earlier than the data-collection date.

Using information from the photographs of sampled foods (product name and package size), we entered each food item into the Nutrition Data System for Research (NDSR), a dietary-analysis software program that calculates the nutrient composition of food items and provides food-group serving estimates (e.g., estimate of servings of vegetables in a can of soup). For sampled food items that were not available in NDSR, we used the nutrition-facts panel to find an item in NDSR that was similar in nutrient composition.

We assessed adherence of EFN-donated foods to the USDA Dietary Guidelines for Americans using the USDA Healthy Eating Index 2005 scoring system (HEI-2005). In the past, the HEI has typically been used to evaluate the quality of individual diets (e.g., to evaluate the extent to which an individual’s diet is in compliance with recommendations in the Dietary Guidelines for Americans). However, the HEI-2005 may also be used to evaluate the quality of the food supply (e.g., to evaluate the extent to which menu items available at a restaurant are consistent with the Dietary Guidelines for Americans). Thus, the versatility of the HEI allows it to be used as a tool both at the individual and food-environment level to capture the overall nutritional quality of an individual diet or food system.

The HEI-2005 is composed of 12 components (Table 1). Each component is scored with a maximum of 5, 10, or 20 points, with a total optimal score of 100 and a minimum score of 0. Nine components evaluate the adequacy of food groups compared with the recommendations given in the Dietary Guidelines for Americans (e.g., servings of vegetables consumed/available in comparison with recommended servings of vegetables). The other three components (referred to as moderation components) evaluate saturated fat, sodium, and solid fat, alcohol, and added sugar (SoFAAS), the nutrients that should be limited in the diet. For all 12 components, a higher score reflects greater consistency with recommended intake levels. For all but the moderation components (saturated fat, sodium, and SoFAAS), a higher score also reflects a higher quantity of the component in the food being evaluated. However, the moderate components are inversely scored, meaning that a high score for the three moderation components reflects a lower density and therefore a higher adherence to the dietary guidelines.

Findings

Total and Component HEI-2005 Scores. We sampled and analyzed a total of 1,255 food items during the study, representing 393 unique foods. We found the mean total HEI-2005 score for all the individually donated foods at EFN that we sampled to be 67.0 out of a total possible score of 100, which is well above the mean total HEI-2005 score of 57.2 for the diet of American adults. Given that the optimal score is 100, room for improvement in the nutritional quality of donated foods exists, with some components (e.g., fruit, dark-green and orange vegetables, milk/dairy, and sodium) having a greater need for

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improvement than others (Table 2). Conversely, five components (total grains, whole grains, oils, saturated fat, and calories from SoFAAS) all received an optimum score.

Proportion of Foods that Were Expired or Past “Best Used by” Date. We found that 19.4% (a total of 244) of all sampled food items were expired or past their “best used by” date. Of the foods that were past their expiration or “best used by” date, the majority (70.9%) had an expiration or “best used by” date that was within the same calendar year that the item was donated (2012). However, we found that some food items had an expiration date in 2011 (15.2% of expired foods), 2010 (5.7% of expired foods), or earlier (8.2% of expired foods, dating as far back as 2004) (Figure 1). More than half of the expired food items were chips/crackers, soups, or dessert items (Figure 2).

Recommendations

Recommendations for EFN. Because the foods that individuals donated to EFN did not achieve an optimal score of 100, modifications are needed to improve the overall nutritional quality of foods donated. In addition to quality, consideration must also be given to the availability of foods in the marketplace, shelf stability, and storage. Most processed foods contain high amounts of sodium, which makes meeting sodium standards difficult. In addition, acceptable food products containing dark-green and orange vegetables have limited availability. Most milk and dairy-rich food products require refrigeration and are therefore not donated by individuals or during food drives. Considering the component scores for EFN-donated foods measured using the HEI-2005 in our study, major areas for improvement include reducing the sodium content of donated foods, increasing dark-green and orange vegetable and whole fruit donations, and compensating for low milk/dairy content.

We specifically propose the following recommendations for EFN to address the deficiencies in these components:

- Promote the donation of low-, reduced-, or no-sodium soups, vegetables, crackers, and chips. Low-sodium foods typically have little to no cost difference from regular sodium foods, and many commercial soups and processed food items are available in low-sodium formulations.
- Encourage the donation of orange vegetables to improve the dark-green and orange vegetable component score, as few dark-green vegetables are simultaneously shelf stable and palatable in the typical American diet. Recommended orange vegetables include canned carrots, pumpkin, and sweet potatoes.
- Solicit donations of canned and dried fruits, rather than 100% fruit juices, to simultaneously improve the total

<table>
<thead>
<tr>
<th>Component</th>
<th>Donated Food Score</th>
<th>Optimum Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total fruit (includes 100% fruit juice)</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Whole fruit only</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Total vegetables, including potatoes</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Dark-green and orange vegetables</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Total grains</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Whole grains</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Milk/dairy</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Meat and legumes</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Oils (nonhydrogenated vegetable oils and oils in fish, nuts, and seeds)</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Saturated fat</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Sodium</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Calories from solid fat, alcohol, and added sugar (SoFAAS)</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2. Mean Scores for Each Component of the HEI-2005 for Sampled Food Items Donated to EFN by Individuals

Figure 1. Number of Food Items Sampled October to December 2012 that Were Found to Be Expired or Past “Best Used by” Date (by Year of Expiration)
and whole fruit scores. Specifically requesting donations of fruit canned in water, juice, or light syrup may be helpful in keeping the SoFAAS score optimal while improving the fruit score.

- Compensate for the low milk/dairy component score through EFN’s bulk-purchasing program. Although this score could be improved through individual donations of or purchasing of nonperishable powdered milk or shelf-stable milk, it is unlikely that these items would be acceptable to most Americans. Therefore, the best use of resources is to procure milk/dairy items from outside buyers.

As a strategy to address the first three components (increased donations of low-sodium foods, orange vegetables, and fruit), EFN could create and provide a list for donors of suggested or preferred items to help guide donor choices toward these more nutritious options.

**Recommendations for Other Food Banks.** EFN has a healthy-foods policy that may have contributed to its overall HEI-2005 score. Nutrition policies can help guide food banks to eliminate unhealthy products such as soda or candy from their distribution system. Food banks concerned with improving the nutritional quality of their programs may want to consider adopting a similar type of policy. To do so, food banks might consider developing a list of recommended foods to provide to corporate donors and organizations coordinating food drives. These recommendations could encourage the purchase of low- or reduced-sodium canned goods; fruits canned in water or juice; orange vegetables; lean meats (such as tuna canned in water); and whole-grain pastas, breads, and cereals. Food banks should discourage donations of low-nutrient foods that are high in fat and sugar (such as candies, cookies, cake mixes, sodas, fruit drinks, potato chips, ramen, and condiments).

Megan Harrison is pursuing a master’s degree in public health nutrition at the University of Minnesota. Her research interests include nutrition among vulnerable children, food insecurity, and development of sustainable public-health nutrition programs. Lisa Harnack is a professor in the School of Public Health and director of the Nutrition Coordinating Center at the University of Minnesota. Her primary research interests focus on assessment and evaluation of dietary behaviors and dietary intake, particularly as they relate to prevention of chronic disease. M. Susie Nanney is an associate professor in Family Medicine and Community Health at the University of Minnesota. Her research is focused on obesity prevention through nutrition environment and policy approaches, school wellness, community-based dietary interventions, and food insecurity/hunger. She was a member of the Board of Directors for the Emergency Foodshelf Network through March 2013.

The research upon which this article is based was supported by a grant from CURA’s Faculty Interactive Research Program. The program was created to encourage University faculty to conduct research with community organizations and collaborators on issues of public policy importance for the state and community. These grants are available to regular faculty at the University of Minnesota and are awarded annually on a competitive basis.

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Job Loss in Paper Mills in Minnesota and Maine

By Rosemarie Park, Ken Root, Catherine Twohig, and Chris Greenleaf

Abstract: Job loss is a threatening issue for many U.S. workers, and has had significant impact in the paper industry in recent years. In the last 25 years, paper-mill workers across the nation have been displaced by nearly 200 mill closures. Within the last two years, the Verso Paper Corporation reduced production at two of its four mills, one in Sartell, Minnesota, and another in Bucksport, Maine. The authors conducted surveys of displaced workers from these two mills to examine how they fared following job loss. This article presents findings from their preliminary analysis of the survey data collected, including how survey responses differed based on age of the displaced workers and mill location. The research upon which this article is based was supported by a CURA New Initiative grant to Rosemarie Park and a Midwest Sociological Society Endowment Award to Ken Root.

The paper industry has been in transition for many years, with paper production influenced by fluctuating product demand, change in ownership (including extensive international expansion), reductions in paper machines and related downsizings, and mill closures. Some commentators attribute the pulp and paper industry difficulties to the weak U.S. economy, high-priced inputs, and low-priced imports. Others point to the increasing production efficiency of fewer mills concurrent with an increasing dependence on electronic communication that has decreased the demand for paper. It has been asserted that Google’s plan to digitize every book will likely lead to additional reductions in the printed page. Reduced paper consumption has already been predicted to lead to a 20% loss of magazine-paper usage within 5 years and a 51% loss within 15 years. These industry difficulties have exacerbated two forms of job loss: the loss of work through downsizing, such as the shutdown of older paper machines; and displacement when a mill shuts down permanently. Aside from the downsizing that occurs when a mill shuts down one or more paper machines, 152 plants closed between 1998 and 2008. Since that time, another 26 paper mills have become inoperative.

In October 2011, the Verso Paper Corporation announced a major downsizing for its Sartell, Minnesota, and Bucksport, Maine, facilities. More than 169 workers were scheduled to be terminated from Sartell, and another 151 workers at the Bucksport mill. A subsequent explosion and fire at the Sartell facility on Memorial Day 2012 that killed one worker and injured several others ultimately resulted in Verso deciding in early August 2012 to permanently close the Sartell mill. This shutdown meant that another 280 workers were also out of work.

This article describes our research on how workers in the paper industry fare when they lose their jobs. We surveyed displaced workers from the Sartell and Bucksport Verso paper mills. In particular, we examined what workers did after displacement (e.g., retire, undertake training to acquire new skills, or find a new job). We also investigated how age and mill location correlated with displaced workers’ attitudes about their job loss. Lastly, we explored the impact of job loss on the lives of the displaced mill workers.

Methodology

Surveys of Downsized Verso Workers at Bucksport and Sartell. In 2011, Verso downsized its operations at two of its four mills, shutting down two paper machines at Sartell, Minnesota, and one paper machine at Bucksport, Maine. To learn more about the job-loss experiences of the workers displaced by this downsizing, we developed a questionnaire that asked them about their length of employment and experiences at Verso. Most important were a set of questions about how the layoff had affected their lives. What was the impact of the layoff on their

1 A. Austin, “Reinventing the Mill,” Biomassmagazine.com (2008), online at biomassmagazine.com/articles/2221/reinventing-the-mill.
6 Data provided by the Institute of Paper Science and Technology, Center for Paper Business and Industry Studies at Georgia Institute of Technology, cbis.gatech.edu/data/mills-online-new.
family life, and how were they coping with these impacts? For instance, had a spouse found employment or expanded their hours at an existing job to supplement the family income? Had relationships with friends and family changed? We also asked about job searches and barriers to finding a new job. Did they intend to retrain for employment in another industry? Finally, we asked about the local community. The questionnaire itself included 23 questions with response choices. However, many respondents included additional comments about their lives, and four included letters documenting their situations.

We identified displaced Verso workers through cooperation with the unions and state dislocated worker offices. Minnesota Department of Employment and Economic Development (DEED) staff provided assistance by contacting salaried personnel at Sartell, and the United Steelworkers District 11 helped us reach union employees at Sartell. The Maine AFL-CIO contacted both salaried and union workers at Bucksport. Each organization mailed our questionnaires and inserts to all the downsized workers. In each envelope, we included a $10 bill with a request for participation in the survey. Displaced Bucksport workers returned 67 questionnaires and displaced Sartell workers returned 95 questionnaires, for return rates of 44% and 56%, respectively.

**Surveys of Verso Workers Terminated at Sartell after the 2012 Fire.**

After the Sartell mill burned, we included in our survey a random sample of 100 additional terminated Sartell workers. Although Verso terminated 280 salaried and union workers after the fire, we only had funds available to survey 100 terminated employees. DEED staff mailed to the terminated workers at Sartell a revised questionnaire that reflected that this was no longer a downsizing, but rather a closure. A total of 64 Sartell workers displaced by the shutdown returned the questionnaire, for a 64% return rate.

**Findings**

**Characteristics of the Displaced Workers Who Responded to the Survey.** Our findings represent data from three samples of displaced workers: workers downsized from the Sartell mill, workers downsized from the Bucksport mill, and workers terminated by the Sartell mill closure. Collectively, the displaced paper-mill workers who returned surveys were overwhelmingly older workers; only 24 of the 224 respondents in all three samples were under 45 years of age (Table 1). In our three samples, the mean age was 55.0 years, with the mean age of the downsized Sartell workers being 54.1 and the downsized Bucksport workers being 56.1. The remaining Sartell workers terminated after the fire averaged 55.2 years of age. The displaced workers were overwhelmingly male, with 12% of our respondents being women, most of whom (21 of the 27 women) worked at Sartell (Table 2).

Most of the workers were long-term employees (Table 3). Sartell workers averaged 25.1 years at their mill, and Bucksport employees had on average 22.0 years of service. Those workers discharged from Sartell after the fire had an average of 29.0 years at that mill. Most of the displaced workers lived near where they worked. Bucksport workers lived in or near Bucksport, a town with a 2010 population of just under 5,000 residents. At Sartell, many workers lived in Sartell or in other nearby small towns such as Sauk Rapids or Rice, while some lived in a larger community like St. Cloud, which has a population of 65,000. Neither Sartell nor Bucksport are “single

### Table 1. Age Categories of Paper-Mill Workers Terminated at Bucksport, Maine, and Sartell, Minnesota

<table>
<thead>
<tr>
<th></th>
<th>23–36</th>
<th>37–44</th>
<th>45–61</th>
<th>62+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucksport, downsized</td>
<td>5 (7%)</td>
<td>4 (6%)</td>
<td>32 (48%)</td>
<td>26 (39%)</td>
<td>67 (100%)</td>
</tr>
<tr>
<td>Sartell, downsized</td>
<td>6 (6%)</td>
<td>5 (5%)</td>
<td>70 (74%)</td>
<td>14 (15%)</td>
<td>95 (100%)</td>
</tr>
<tr>
<td>Sartell, terminated at closure</td>
<td>1 (2%)</td>
<td>3 (5%)</td>
<td>54 (88%)</td>
<td>4 (6%)</td>
<td>62 (101%)</td>
</tr>
</tbody>
</table>

Note: Some rows total to more than 100% due to rounding. Number of respondents for each location sums to less than the total number of respondents for the questionnaires because some respondents chose not to answer this question.

### Table 2. Gender of Paper-Mill Workers Terminated at Bucksport, Maine, and Sartell, Minnesota

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th>Male</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucksport, downsized</td>
<td>6 (9%)</td>
<td>58 (91%)</td>
<td>64 (100%)</td>
</tr>
<tr>
<td>Sartell, downsized</td>
<td>14 (15%)</td>
<td>80 (85%)</td>
<td>94 (100%)</td>
</tr>
<tr>
<td>Sartell, terminated at closure</td>
<td>7 (11%)</td>
<td>55 (89%)</td>
<td>62 (100%)</td>
</tr>
</tbody>
</table>

Note: Number of respondents for each location sums to less than the total number of respondents for the questionnaires because some respondents chose not to answer this question.

### Table 3. Years of Service of Paper-Mill Workers Terminated at Bucksport, Maine, and Sartell, Minnesota

<table>
<thead>
<tr>
<th></th>
<th>1–9</th>
<th>10–24</th>
<th>25+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucksport, downsized</td>
<td>19 (29%)</td>
<td>10 (15%)</td>
<td>37 (56%)</td>
<td>66 (100%)</td>
</tr>
<tr>
<td>Sartell, downsized</td>
<td>11 (12%)</td>
<td>35 (37%)</td>
<td>49 (52%)</td>
<td>95 (101%)</td>
</tr>
<tr>
<td>Sartell, terminated at closure</td>
<td>1 (1%)</td>
<td>13 (20%)</td>
<td>50 (78%)</td>
<td>64 (99%)</td>
</tr>
</tbody>
</table>

Note: Some rows total to more or less than 100% due to rounding. Number of respondents for each location sums to less than the total number of respondents for the questionnaires because some respondents chose not to answer this question.
industry” communities; both are located in proximity to other communities.

**What Did Older Displaced Verso Workers Choose to Do after Their Job Loss?**

**Retirement.** Our questionnaires asked displaced workers in all three samples if they considered retirement after being displaced from the Verso paper mill. Almost 20% of the workers displaced at the Sartell and Bucksport mills were 62 and older at the time of their displacement, so retirement, or even early retirement, was a viable option for some mill workers. A total of 80 of the 200 (40%) workers age 45 and older in our study reported considering retirement, although only 41 workers reported actually being retired (Table 4).

**Additional Training or Education.** We also asked displaced older workers if they had sought out opportunities to further their training or education in support of finding new employment. Of the 64 older workers who reported they were unemployed and looking for work, 16 (25%) responded that they were willing to be trained to facilitate finding full-time replacement work with wages and benefits comparable to what they had when working for Verso.

**Other Plans after Displacement.** Most respondents, regardless of mill location, told us that they had anticipated working at the mill until they retired. Given that, when we asked older displaced workers in all three samples about their plans following displacement, we found that some were confused or undecided about what they wanted to do or could do. Of the 143 older displaced workers who did not retire or seek new training/education, 8 (6%) reported that they were unable to work, and 64 (45%) reported that they were currently looking for work. We found that 61 of the 200 (31%) older displaced workers had already found full-time (45 workers) or part-time (16 workers) employment. This included 21 (31%) of those downsized from Bucksport, 22 (23%) of those downsized from Sartell, and 18 (28%) of those terminated from Sartell after the fire.

**What Attitudes Did Displaced Verso Workers Have about Their Job Loss?** When we asked displaced workers of all ages in all three samples how they felt about their dislocation, attitudes regarding job loss differed substantially between older workers and younger workers, as well as by mill location. At Bucksport, 25% of the younger workers reported that their job loss was in fact a good thing that had happened, whereas 65% of the older workers gave the same response. However, results for all displaced Sartell workers indicated that a minority of both younger and older workers (38% and 26%, respectively) reported that job loss was generally good for them (Table 5).

**How Did Job Loss Impact the Lives of Displaced Verso Workers?**

When we asked displaced mill workers about their physical and mental health since they were displaced, we found that responses were mixed. A higher percent of respondents from both mills reported that their physical health had improved (26% for Sartell and 32% for Bucksport) rather than declined (14% for Sartell and 22% for Bucksport) after job loss (Table 6). However, mental-health outcomes following displacement differed for workers from the two

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### Table 4. Current Employment Situation for Paper-Mill Workers Displaced in Bucksport, Maine, and Sartell, Minnesota

<table>
<thead>
<tr>
<th>Location</th>
<th>Employed, full-time</th>
<th>Employed, part-time</th>
<th>Retired</th>
<th>Unable to work at present</th>
<th>In a training or education program</th>
<th>Unemployed, looking for work</th>
<th>Unemployed, not looking for work</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucksport, downsized</td>
<td>16 (24%)</td>
<td>11 (16%)</td>
<td>27 (40%)</td>
<td>3 (4%)</td>
<td>5 (8%)</td>
<td>4 (6%)</td>
<td>1 (2%)</td>
<td>67 (100%)</td>
</tr>
<tr>
<td>Sartell, downsized</td>
<td>22 (23%)</td>
<td>4 (4%)</td>
<td>14 (15%)</td>
<td>4 (4%)</td>
<td>13 (14%)</td>
<td>32 (34%)</td>
<td>5 (5%)</td>
<td>94 (99%)</td>
</tr>
<tr>
<td>Sartell, terminated at closure</td>
<td>17 (27%)</td>
<td>2 (3%)</td>
<td>0 (0%)</td>
<td>1 (2%)</td>
<td>6 (10%)</td>
<td>33 (52%)</td>
<td>4 (6%)</td>
<td>63 (100%)</td>
</tr>
</tbody>
</table>

Note: Some rows total to less than 100% due to rounding. Number of respondents for each location sums to less than the total number of respondents for the questionnaires because some respondents chose not to answer this question.

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### Table 5. Responses as to Whether Their Job Loss Was Generally Good or Generally Bad for Them from Paper-Mill Workers Displaced in Bucksport, Maine, and Sartell, Minnesota

<table>
<thead>
<tr>
<th>Location</th>
<th>Generally Good</th>
<th>Generally Bad</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucksport workers 45 and older</td>
<td>34 (65%)</td>
<td>18 (35%)</td>
<td>52 (100%)</td>
</tr>
<tr>
<td>Bucksport workers 44 and younger</td>
<td>2 (25%)</td>
<td>6 (75%)</td>
<td>8 (100%)</td>
</tr>
<tr>
<td>Sartell workers 45 and older</td>
<td>35 (26%)</td>
<td>100 (74%)</td>
<td>135 (100%)</td>
</tr>
<tr>
<td>Sartell workers 44 and younger</td>
<td>5 (38%)</td>
<td>8 (62%)</td>
<td>13 (100%)</td>
</tr>
</tbody>
</table>

Note: Sartell worker data represent responses for all displaced Sartell workers, both those originally downsized and those displaced after the mill’s closure. Number of respondents for each location sums to less than the total number of respondents for the questionnaires because some respondents chose not to answer this question.
mills. A higher percentage of respondents from the Sartell mill reported that their mental health had declined (54%) rather than improved (18%) since they lost their job. Conversely, for the Bucksport respondents, 28% indicated that their mental health had worsened after displacement, but 40% reported improved mental health following their job loss (Table 7). The higher percent of Bucksport displaced workers who indicated improved rather than declining mental health aligned with our finding that a majority of Bucksport displaced workers had a “generally good” attitude about their job loss (Table 5).

In terms of financial impacts that displaced Verso workers experienced, we found that 16 respondents had already moved, with 13 of the movers being from Sartell. Several respondents—49 workers in Sartell and 13 workers (21%) from Bucksport—reported that they had to budget very carefully to make it through each month, and another 20 respondents from Bucksport—reported that they had missed mortgage or rent payments (8 workers or 5% from Sartell, 3 workers or 5% from Bucksport), had cut back on what they purchased (7 workers or 6% from Bucksport), or postponed medical or dental care (4 workers or 27% from Sartell, 19 workers or 31% from Bucksport).

**Final Thoughts and Future Directions**

The loss of work—through no fault of one’s own—has the potential to influence those displaced substantially. If dislocated workers can find other work quickly, or retire, they may not be greatly impacted, but if they cannot find meaningful employment quickly, they may experience all sorts of difficulties. Displaced paper-mill workers recently dislocated from employment in Sartell, Minnesota, and Bucksport, Maine, represent the range of those impacts; many were unable to find new employment, experienced negative impacts on their mental health, or were financially challenged. However, on a national scale, the respondents in our sample of paper-mill workers may be better off than many displaced workers, because although only 41 workers were actually about to retire, more were close enough to retirement that they could get by using the severance package they received, unemployment, and/or general belt tightening to ease into retirement. More than half (54%) of workers between 56 and 62 years old who were terminated at Sartell attended education or job training programs. Another 11% and 14% of workers 63 and older in Minnesota and Maine, respectively, took the retraining option. Situations of workers confronting involuntary job loss in other mass displacements may not have all of these options available to them; although federal aid for dislocated workers is often available, severance packages vary considerably.

### Table 6. Physical Health Impacts of Job Loss for Paper-Mill Workers Displaced in Bucksport, Maine, and Sartell, Minnesota

<table>
<thead>
<tr>
<th></th>
<th>Serious health problems</th>
<th>Slight health problems</th>
<th>No change</th>
<th>Some improvement</th>
<th>Considerable improvement</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucksport, downsized</td>
<td>3 (5%)</td>
<td>10 (17%)</td>
<td>28 (47%)</td>
<td>14 (23%)</td>
<td>5 (8%)</td>
<td>60 (100%)</td>
</tr>
<tr>
<td>Sartell, downsized</td>
<td>1 (1%)</td>
<td>12 (13%)</td>
<td>52 (56%)</td>
<td>22 (24%)</td>
<td>6 (6%)</td>
<td>93 (100%)</td>
</tr>
<tr>
<td>Sartell, terminated at closure</td>
<td>3 (5%)</td>
<td>6 (10%)</td>
<td>41 (65%)</td>
<td>13 (21%)</td>
<td>0 (0%)</td>
<td>63 (101%)</td>
</tr>
</tbody>
</table>

Note: Some rows total to more than 100% due to rounding. Number of respondents for each location sums to less than the total number of respondents for the questionnaires because some respondents chose not to answer this question.

### Table 7. Mental Health Impacts of Job Loss for Paper-Mill Workers Displaced in Bucksport, Maine, and Sartell, Minnesota

<table>
<thead>
<tr>
<th></th>
<th>Greatly harmed mental and emotional health</th>
<th>Slightly harmed mental and emotional health</th>
<th>No real effect on mental and emotional health</th>
<th>Slightly improved mental and emotional health</th>
<th>Greatly improved mental and emotional health</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucksport, downsized</td>
<td>6 (9%)</td>
<td>12 (19%)</td>
<td>20 (31%)</td>
<td>11 (17%)</td>
<td>15 (23%)</td>
<td>64 (99%)</td>
</tr>
<tr>
<td>Sartell, downsized</td>
<td>5 (6%)</td>
<td>40 (44%)</td>
<td>27 (30%)</td>
<td>14 (15%)</td>
<td>5 (6%)</td>
<td>91 (101%)</td>
</tr>
<tr>
<td>Sartell, terminated at closure</td>
<td>6 (9%)</td>
<td>33 (52%)</td>
<td>16 (25%)</td>
<td>9 (14%)</td>
<td>0 (0%)</td>
<td>64 (100%)</td>
</tr>
</tbody>
</table>

Note: Some rows total to more or less than 100% due to rounding. Number of respondents for each location sums to less than the total number of respondents for the questionnaires because some respondents chose not to answer this question.
Our findings reported here indicate that older workers displaced from the Bucksport mill were more positive in their attitudes about job loss than older workers dislocated by the downsizing and subsequent mill closing at Sartell. Since the notice given at Bucksport was only one day, we were puzzled at this difference in attitude. There may be several possible explanations for these differences:

- Bucksport workers had the option of severance pay, and Verso initially only terminated those who selected severance. Workers who had chosen to exercise this option would likely be more positive about the job loss.
- More Bucksport workers had retirement as a viable option, since more Bucksport workers were older and closer to retirement than Sartell workers (39% of the Bucksport workers were 62 or older, compared with 11% of the Sartell workers). Bucksport workers had fewer years to get by with reduced income.
- Paradoxically, Bucksport workers had less potential for new employment based on the unemployment rate in the area. Bucksport had a 7.2% unemployment rate in November 2012, compared with 5.6% for Sartell–St. Cloud. In addition, Bucksport’s smaller size compared with Sartell–St. Cloud may also have reduced re-employment prospects. However, since the Buckport workers were older, a new job for less money would have been less appealing and the pressure for reemployment less if retirement was near. In addition, the

Table 8. Financial Impacts of Job Loss for Paper-Mill Workers Displaced in Bucksport, Maine, and Sartell, Minnesota

<table>
<thead>
<tr>
<th>Location</th>
<th>No problem</th>
<th>No problem, but present income not the same</th>
<th>Have to budget closely</th>
<th>Finances are a major problem</th>
<th>Receiving or will have to apply for assistance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucksport, downsized</td>
<td>20 (33%)</td>
<td>21 (34%)</td>
<td>13 (21%)</td>
<td>6 (10%)</td>
<td>1 (2%)</td>
<td>61</td>
</tr>
<tr>
<td>Sartell, downsized</td>
<td>11 (12%)</td>
<td>27 (30%)</td>
<td>30 (34%)</td>
<td>14 (16%)</td>
<td>7 (8%)</td>
<td>89</td>
</tr>
<tr>
<td>Sartell, terminated at</td>
<td>10 (16%)</td>
<td>27 (42%)</td>
<td>19 (30%)</td>
<td>6 (9%)</td>
<td>2 (3%)</td>
<td>64</td>
</tr>
</tbody>
</table>

Note: Number of respondents for each location sums to less than the total number of respondents for the questionnaires because some respondents chose not to answer this question.


Vacillating product demand, international expansion, and greater production efficiency all influence the paper production industry.
Bucksport Mill downsized its workforce but did not close its doors as the Sartell Mill did after the explosion. Perhaps the hope that times would improve and they would be rehired also factored into the more optimistic outlook among Bucksport workers.

We intend to undertake further analyses to more clearly understand these attitudinal differences. Our expectation is that the local economies have a major impact. The plight of workers laid off in small towns that are dependent on single industries has been an ongoing theme in rural sociology research.8 In Minnesota we have seen communities on the Iron Range struggle with boom and bust periods in the taconite industry. Most of Minnesota’s population is concentrated in the central cities of Minneapolis and St. Paul, with development running north and south from St. Cloud to Rochester. Sartell workers are within range of this urban area. Bucksport is more isolated and, like the Iron Range, offers fewer options for employment. Many younger workers are faced with moving to urban areas to find good paying jobs. Older workers may find this less acceptable. Families are separated as a spouse finds work at a distance. Finding family-sustainable employment is both a rural and an urban problem, and with the continued decline of manufacturing in the United States, is likely to be with us for a long time.

Rosemarie Park is an associate professor in the Department of Organizational Leadership, Policy, and Development at the University of Minnesota. Her primary teaching and research interests are continuing education and retraining issues. Ken Root taught in the Sociology Department at Luther College (Decorah, IA) until his retirement. Catherine Twohig is a University of Minnesota adult education specialist in the College of Education and Human Development. Chris Greenleaf is the Rapid Response, Peer Support Coordinator for the Maine AFL-CIO.

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Project Assistance Available from CURA

The Center for Urban and Regional Affairs supports research and technical assistance through a variety of programs, each with their own deadlines and application procedures.

- **The Community Assistantship Program (CAP)** matches community-based nonprofit organizations, citizen groups, and government agencies in Greater Minnesota with students who can provide research assistance. Eligible organizations define a research project, submit an application, and, if accepted, are matched with a qualified student to carry out the research. The application deadline for fall semester 2014 assistantships (early September to mid-January 2015) is June 30, 2014. For more information, to discuss potential projects, or for assistance with applications, contact CAP coordinator Will Craig at 612-625-3321 or wcraig@umn.edu, or visit www.cura.umn.edu/cap.

- **The Community Geographic Information Systems (CGIS) program** provides technical assistance in mapping, data analysis, and GIS to community-based organizations and nonprofits in the Twin Cities metropolitan area. Staff at the CGIS program specialize in parcel-level mapping, demographic analysis, and Internet-based GIS technologies. The CGIS program has no formal application process or deadline to apply. Project requests can be made by phone, e-mail, or online at z.umn.edu/cgis, and generally can be turned around within two weeks. For more information, to discuss potential projects, or for assistance with data needs, contact CGIS program coordinator Jeff Matson at 612-625-0081 or jmatson@umn.edu, or visit www.cura.umn.edu/cgis.

- **The Kris Nelson Community-Based Research Program** (the Nelson Program) provides student research assistance to community and neighborhood-based organizations and suburban government agencies in the Twin Cities seven-county metropolitan area. Priority is given to groups serving diverse communities. Projects may include any issue relevant to a neighborhood or community’s needs and interests, including planning, program development, or program evaluation. Applications from organizations collaborating on a project are encouraged. The application deadline for fall semester 2014 assistantships (early September to mid-January 2015) is June 30, 2014. For more information, contact CURA community programs assistant Jeff Corn at 612-625-0744 or curacbr@umn.edu, or visit www.cura.umn.edu/nelson-program.

- **The Minnesota Center for Neighborhood Organizing (MCNO)** trains people to work effectively in organizing and staffing neighborhood organizations. It trains new organizers and increases the skills of existing neighborhood staff, leaders, and volunteers through internships, workshops, and other programs. For more information about MCNO and the training opportunities available, contact Jay Clark at 612-625-2513 or clark037@umn.edu, or Ned Moore at 612-625-5805 or nedmoore@umn.edu, or visit www.cura.umn.edu/mcno.
Each issue of the CURA Reporter features a few capsule descriptions of new projects under way at CURA. The projects highlighted in this issue were made possible through one of CURA’s community-based research programs, which provide graduate-student assistance for community-based applied research projects, program planning and development, program evaluation, and other short-term projects. These projects represent only a portion of those that will receive support from CURA and its partners during the coming year.

**Vacant-Land Assessment for Urban Agriculture Project**

AfroEco exists to organize a new relationship between blacks and the land and is involved in environmental justice and food sovereignty. This project was needed to assess and develop plans for the use of 400 food-bearing parcels owned by the City of Minneapolis. Data were needed to understand the availability of the lots, their capacity, and their best possible uses in order to help Minneapolis citizens put them to good use. Emily Goellner, a student in the Master of Urban and Regional Planning program, generated maps, compiled an analysis of the data, helped develop a community development plan, and participated in community sustainable food groups, all of which she documented in a final report and presentation to AfroEco. Her work will help the organization create better sustainable-food options for the people of Minneapolis and put vacant land to more efficient use.

**Program:** Kris Nelson Community-Based Research Program

**What About People? Measuring the Social Impacts of Creative Place Making**

The Pillsbury House Theatre in Minneapolis exists to create challenging theater that inspires choice, change, and connection in viewers and performers. This project was focused on researching and evaluating the impacts of creative place making in certain neighborhoods to help create positive outcomes in communities. In their 2010 report, *Creative Placemaking*, Ann Markusen and Anne Gadwa describe creative placemaking as a situation in which “partners from public, private, non-profit, and community sectors strategically shape the physical and social character of a neighborhood, town, city, or region around arts and cultural activities. Creative placemaking animates public and private spaces, rejuvenates structures and streetscapes, improves local business viability and public safety, and brings diverse people together to celebrate, inspire, and be inspired.” Britany Edwards, a Masters of Public Policy graduate student, analyzed existing local data, identified missing or unavailable data, and compiled the research into a report for the community. The report will be used as a resource for understanding creative place making, and the results will be reflected back to the community for better knowledge and implementation of creative place making.

**Program:** Community Assistantship Program (CAP)

**Southeastern Minnesota Cover-Crop Use**

The Hiawatha Valley Resource Conservation and Development Council supports local people in balancing land use with environmental preservation. This project gathered information about the use of cover crops in the region to produce crop-tracking information. Cover crops are crops planted primarily to increase soil fertility or improve soil quality. Because farmer-to-farmer communication has been the most efficient way to adopt and successfully use cover crops, educational materials for farmers to use together are needed. Cadence Peterson, an Urban and Regional Planning graduate student, conducted research, interviewed cover-crop representatives, met with farmers to understand successes and barriers, and assembled all gathered information into a final report. The results will be used to educate farmers on the successful use of cover crops.

**Program:** Community Assistantship Program (CAP)
Resilient Communities Project Partners with Rosemount to Advance Community Sustainability

The University of Minnesota’s Resilient Communities Project (RCP) is pleased to announce that the city of Rosemount has been selected as its partner community for the 2014–2015 academic year. The partnership will bring the expertise of hundreds of graduate students and the University to sustainability-related projects identified by Rosemount city staff and community partners.

“As we plan for Rosemount’s future, it’s a top goal of the City Council to work toward the community’s environmental, financial, and cultural health,” said Rosemount Mayor Bill Droste. “It will be a great advantage to consult with the University of Minnesota on ways to make Rosemount a more sustainable community for our growing and diverse population.”

RCP organizes yearlong partnerships between the University of Minnesota and Minnesota communities. Each academic year, RCP chooses a community partner through a competitive request-for-proposal process, helps identify potential projects based on community-identified sustainability issues and needs, and matches the community’s project needs with University of Minnesota courses.

The partnership provides the community with access to students from a wide range of programs and disciplines—from architecture, planning and engineering to business, environmental sciences and the humanities. Through work with RCP, the community is able to enhance its own capacity to advance sustainability. Students who participate in RCP projects benefit from real-world opportunities to apply their knowledge and training and bring energy, enthusiasm and innovative approaches to address local issues.

“We are looking forward to working with Rosemount as our next community partner,” said RCP director and Humphrey School of Public Affairs associate professor Carissa Schively Slotterback. “The City’s proposal showed a clear commitment to advancing sustainability and resilience and outlined a wide range of projects that will provide tremendous community-engaged learning opportunities for University of Minnesota students.”

Rosemount’s winning proposal identifies 40 projects for which the city would like assistance, including affordable and multigenerational housing, neighborhood and resident engagement, recreational programming for youth, services for new immigrant communities, open space restoration, turf management, community gardens, public art, employee wellness and staffing, alternative and renewable energy, climate adaptation, energy and water conservation, storm water management, business clustering and economic development, green business parks, and transportation planning.

Staff from RCP and Rosemount will begin working this spring to define the scope of the projects and match them with courses offered at the University in fall 2014 and spring 2015. RCP program manager Mike Greco will administer the partnership on behalf of the University, and Rosemount community development director Kim Lindquist will coordinate the city’s participation in the program.

Rosemount will be the third community to work with the RCP program.

The program was launched during the 2013–2014 school year, when RCP worked with Minnetonka on 14 projects that engaged 25 classes and more than 200 students across eight colleges at the University of Minnesota. Student work helped Minnetonka advance initiatives to reduce phosphorous and sediment pollution in local lakes and rivers, evaluate and improve local housing assistance programs, plan for transit-oriented development around future light-rail stations, reduce traffic congestion, and increase engagement with local residents. Currently, RCP is concluding its academic year partnership with North St. Paul, which has matched 17 projects with more than 40 courses and 300 students. Projects have ranged from implementing a “living streets” policy and creating environmental education programming for local parks to helping residents age in place and promoting redevelopment and pedestrian improvements in the downtown business district.

RCP is an initiative of the Sustainability Faculty Network at the University of Minnesota, with funding and administrative support provided by CURA and the Institute on the Environment. To learn more, visit rcp.umn.edu.
Agricultural Changes and the Depopulation of Nonmetropolitan Minnesota

by John Fraser Hart and Mark B. Lindberg

Abstract: The population of nonmetropolitan Minnesota is slowly declining as farms grow larger and require fewer workers, although the population of some small towns and cities in the nonmetropolitan area continues to grow. The demographically deprived nonmetropolitan areas have fewer young women of childbearing age and more elderly people. Population change is related to farming change that is tied to the physical geography of the state. The shift to cash-crop farming demands larger farms that use less labor but need level land to facilitate the use of modern farm machinery. We suggest that many dairy farms in areas of rolling topography are too small to remain economically competitive; their operators will downshift to hobby ranches for beef cattle and take off-farm jobs.

In 2010, three out of every five Minnesotans lived within 50 miles of the Minneapolis city hall. That share has been steadily inching up, because most of the rest of the state is continuing to leak population, a result of the geographic interplay of people, land, and livelihood (or demography, the environment, and the economy, if you prefer more stilted terminology). At the same time, the population is continuing to stagnate upward in many towns and cities outside the Twin Cities metropolitan area, which means that in the rest of Minnesota it is withering away even more rapidly than is immediately apparent.

We used the interplay of people, land, and livelihood to group Minnesota’s 87 counties into six demographic regions (Figure 1), each of which has its own unique trajectory of population change (Figure 2). The dairy area in the central and southeastern part of the state has been growing at a steady rate, as has the metro area, which is completely off this chart. The prairie plains of the southwest have been losing population steadily since their peak more than half a century ago. The northwoods area has bumped upward only slightly over the last five decades. The arc of lakeshore resort and retirement counties has been growing nicely since 1960, whereas the population of the Red River Valley in the northwest has stagnated since 1940. Our discussion here will focus primarily on the valley, prairie, dairy, and lakes areas of the state.

The Valley and Prairie Areas

The valley and prairie areas of southwestern and northwestern Minnesota have suffered the most obvious population losses. Most of the townships in these areas lost population in five or even all six of the censuses since 1950 (Figure 3). Prospects for growth in these communities seem slender indeed unless, by some miracle, they are able to recruit significant numbers of in-migrants, because they have been unable to retain their own young
women of childbearing years (ages 25–44, Figure 4).\(^1\) Most of the counties of nonmetropolitan Minnesota have lower percentages of women aged 25–44 than the metropolitan counties, and the counties farthest away from the metro area generally have the lowest percentages. The actual numerical differences might seem trivial, but every percentage point can be important in sparsely populated rural areas.\(^2\)

The nonmetropolitan counties also have higher percentages of people aged 65 and older than the metro counties do (Figure 5), which means they probably have higher death rates. The unhappy combination of low birth rates and high death rates is a sure sign of persisting population loss and demographic deprivation. This demographic deprivation is not an indicator of economic stress; in fact, it probably is the product of economic success, because the demographically deprived areas of southwestern and west Minnesota are among the state’s better farming areas. Agriculture dominates the economy of these areas because they have relatively few urban centers that offer significant alternative employment opportunities.

**Prairie Farms.** In recent decades, farms in these areas have become larger and more productive, and bigger and better machines have enabled ever fewer people to work them successfully. Farming has evolved into a semi-sedentary occupation; a modern farmer spends more hours sitting—on a tractor, in the cab of a combine harvester, in the glow of a computer screen—than in doing hard physical labor. In 1960, half of Minnesota’s farmland was in farms of 260 acres or less, and few farms had as much as 500 acres, but by 2007 two-thirds of the state’s farmland was in farms of 500 acres or more, and nearly one-quarter was in farms of 2,000 acres or more (Figure 6). In 2007, more than three-quarters of the harvested cropland in western and southwestern Minnesota was in farms of more than 500 acres (Figure 7).

Farm enlargement has been associated with a shift from a traditional mixed crop-and-livestock farming

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\(^1\) The ages 20–44 are more properly the childbearing years, but 20- to 24-year-old young women are heavily though temporarily concentrated in counties that have four-year colleges, which totally obfuscates the data for this age cohort. For this reason, we examined the demographics of women who were 25–44 years of age.

\(^2\) For example, the difference between 10.5% and 12.5% could be two more babies a year, which is vital in areas where every birth is front-page news.
system (“corn and hogs”) toward cash-crop farming (“corn and soybeans”), with a remarkable change occurring around 1970. Before 1970, Minnesota farmers derived only about one-third of their income from the sale of crops, but since then this proportion has risen to nearly half (Figure 8).

The shift from livestock to cash-crop farming coincided with the widespread adoption of computers by farmers. Their new computers told many farmers that they had not been making as much money on livestock as they had thought, and encouraged them to jettison their livestock operations and concentrate on cash crops. Cash-crop farming now dominates the Red River Valley, where the sale of cash crops such as corn, wheat, soybeans, and sugar beets accounts for more than three-quarters of all farm sales (Figure 9).

**Hogs.** The lesser proportion of cash-crop sales in southwestern Minnesota may be attributed to the emergence of entrepreneurs who have contracted with local farmers to develop large-scale hog farming (Figure 10). The entrepreneurs breed sows to produce piglets, they contract with farmers to feed the piglets in confined-feeding operations until they reach market weight, and then they market the hogs. Crop production and hog production are completely separate operations, even though they take place on the same farm; the farmer does not feed his or her hogs any of the crops he or she produces. The income from a contract hog operation might have slightly slowed the exodus of farm youth by enabling one son or daughter to remain on the farm, but it has not
been enough to counteract the enormous increase in farm size, which has greatly reduced the total number of farms and farm families.

**The Dairy Area**

Large-scale cash-crop farming demands large acreages of level land that is well suited to the operation of massive modern farm machines. The flat glacial plains deposited by the Des Moines Lobe in southwestern Minnesota and the flat plains deposited on the floor of ice-dammed glacial Lake Agassiz in the Red River Valley of northwestern Minnesota are ideal for such farming (Figure 11). More than a century ago, these flat plains had prairie grassland that was kept tree-free by the terrifying wildfires that routinely scorched it.

To the east the rolling lake-speckled topography of the glacial moraines buffered these moraines against prairie wildfires, and they had a natural vegetation of deciduous hardwood forest (Figure 12). The choppy morainic topography is not well suited to large-scale cultivation of crops, and much of it was more appropriately used for pasture, which is better suited for maintaining herds of grazing cattle (both dairy and beef). Accordingly, dairy farming and beef cattle ranching now dominate the economy of the complex glacial topography of the rural areas of eastern Minnesota (Figure 13).

**Dairy Farms.** In recent years, successful dairy farmers have massively restructured their operations. In 1987, traditional 40-cow dairy farms were still the norm, but the number of dairy farms has continued to plummet since then, and today some people argue that a dairy farm that milks fewer than 500 cows is too small to be economically viable. In 1987, 90% of the dairy cows in Minnesota were in herds with fewer than 100 cows, but by 2007 only 40% were in such herds, and 20% were in herds of more than 500 cows, which could not have been imagined in 1987 (Figure 14).

Although we dislike the term “factory farming,” because it has acquired pejorative connotations, today modern dairy farmers mass-produce most of our milk efficiently and cheaply in large confined-feeding operations. Small dairy farmers complain that the price they get for their milk is too low, but they have the numbers backward—they have been put out of business because they are too inefficient, and their cost of producing milk is too high.

**Dairy Downshifting.** What has happened to the 12,000 dairy farmers (and their families) who have stopped milking since 1987? Some have sold or rented their land to other farmers, but many have downshifted their dairy herds to beef-cattle production, which demands far less labor, and frees them to take jobs in towns nearby. We believe that small-scale beef ranching increasingly is going to become the norm in the former dairy areas, but most of the farms in these areas are so small that beef ranching will never amount to more than a hobby.

Former dairy farmers are fortunate, because they live near towns that provide jobs. Several decades ago, a dairy farm had to be close to a creamery that could manufacture its milk into butter and cheese, so every small town and many a crossroads in the dairy area had a small processing plant. These
cremeries were the nuclei that helped to transform the small towns of the dairy area into minor manufacturing centers, with attendant employment opportunities. They are in sharp contrast to the lonely trackside grain elevators in the whistle stops along the railroads in the prairie grain-farming areas.

Farming no longer dominates the rural economy or the demography in the dairy area. The availability of employment in its small towns may veneer the fact that the farm population is continuing to decrease as small dairy farms downshift to small-scale beef ranches. The total population has continued to increase sluggishly, but this growth is deceptive, because it is concentrated in incorporated places (cities, towns, and villages), and many townships with no incorporated places have actually been losing population as the number of dairy farms has plummeted.

The Lucky Lakeshore Loop
The exception is the arc of lakeshore resort counties that loops around the northern end of the dairy area (Figure 1). These counties have grown with the influx of elderly people who have converted their summer cottages into permanent year-round retirement residences. These individuals need an influx of younger workers to do for them the things they are no longer able to do for themselves. Conversely, many nonmetro areas in Minnesota that are dominated by farming probably will continue to lose population. This loss is clearly evident in cash-crop farming areas that have little alternative source of employment, and perhaps a bit less evident in dairy areas whose small towns are minor cogs in the national network of manufacturing centers. Only nonmetro areas that are close enough to major urban areas, or aesthetic enough, will be able to recruit people who desire the amenity of residence in the countryside.

Conclusion
The ongoing depopulation of nonmetropolitan Minnesota has resulted in a population distribution in 2010 with three major areas: a more densely populated metropolitan area from St. Cloud to the Twin Cities; a vast swath of moderately populated townships that strikes southeastward in a line from Moorhead to Leech Lake, with Bemidji, the Iron Range, Duluth, and the Brainerd-lakes area as northern outliers; and sparsely populated areas across the northern third of the state and
in the southwestern quadrant (Figure 15). Smaller areas of denser population speckled through the latter two areas mark smaller cities and towns.

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CURA:Tech—A Civic-Technology Incubator

by Kristen Murray and Adja Gildersleve

CURA has recently launched CURA:Tech, a civic-technology incubator. The program is funded by the McKnight Foundation’s Region & Communities Program, and will provide funding for a set of awards to support the collaborative development of new “civic technologies,” including apps, websites, data visualizations, and other digital tools that leverage public data to increase transparency, accountability, and efficiency in how people and government interface. Civic technologies can improve people’s access to jobs, transportation, housing, education, health resources, public processes, and engagement with decision makers. CURA:Tech asks the question, “How can technology strengthen your community?” and particularly seeks to create benefit for low-income communities and communities of color. This question and the program are situated in two larger contexts: digital-equity work and the civic-technology movement.

Digital-Equity Work
In today’s growing digital society, access to computers and the Internet (and the skills to use these tools) are critical. As schools move to using online textbooks, as the GED becomes available online only, and as job applications increasingly require an Internet connection, people without Internet access and digital-literacy skills are left behind in the economic market. A survey conducted by the City of Minneapolis’s Information Technology Department reported that a high disparity in Internet access at home exists between white communities and low-income communities and communities of color. This finding suggests that the digital divide is a reality in Minneapolis that threatens to perpetuate the present racial employment and achievement gaps. Local efforts such as the AmeriCorp-supported Community Technology Empowerment Project and the cross-sector organizations in which its members serve (including the City of Minneapolis’s Information Technology

The Civic-Technology Movement
The last several years have also seen a growth in energy directed to the development of civic technologies. Much of this work has been led by Code for America, a San Francisco-based organization that places technology designers and developers in city governments around the country. Civic technologies are also being developed by coders and designers who work on projects in their spare time, at weekend “hackathons,” and at other community gatherings. Locally, Open Twin Cities (a Code for America Brigade and a CURA partner) has been working since 2012 to build community, support, and awareness for opening up public data sets and developing local civic technology.

CURA:Tech
Much of the national civic-technology work to date, however, has not considered who benefits from the tools that are created. To address this issue, CURA:Tech will engage a diverse group of community leaders, community-based organizations, technology developers, designers, and others to collaboratively imagine, design, build, and test civic technologies that will strengthen communities and create benefit for low-income communities and communities of color in the Twin Cities metropolitan area. This work, including the tools that are developed and the community-building processes that are established, will help broaden participation in the local and national conversation about civic-technology development and public data access.

During the fall of 2013, CURA staff engaged community partners in conversation about how a civic-technology incubator could and should work. Approximately 50 people working across the Twin Cities in a variety of focus areas gathered to give feedback on initial process ideas and talk about possible tools that would resonate with their work. In recent months, CURA staff have also been discussing ideas informally with designers, technology developers, and social entrepreneurs at the CityCamp Minnesota unconference in November (cohosted by E-Democracy.org and Open Twin Cities), as well as during other gatherings and events.

These conversations have revealed some strategies that will be part of CURA:Tech—leveraging design thinking and design strategies, involving end users in the process, building community and capacity (as well as tools and technologies), making sure the social/political goal drives the technology, and watching for opportunities for “t” technology (such as printed material or physical objects) to enhance “T” technology (apps, data visualizations, websites, text-messaging systems, etc.).

CURA:Tech program activities launched in January 2014, and will culminate in a “Demo Day” of tools in late summer 2014. CURA:Tech will make awards to teams interested in developing civic-development projects in two phases—the first in May, and the second in August. Technical assistance for applicants includes a human-centered design workshop and opportunities to discuss potential projects with mentors from the fields of design, technology, communication, and social entrepreneurship. For more information about the application process and potential projects, visit www.cura-tech.org, or contact Kristen Murray at 612-625-7560 or kmurray@umn.edu.

Kristen Murray is a CURA program developer. Adja Gildersleve is a member of the City of Minneapolis’s Community Technology Empowerment Project.

Funding for CURA:Tech is provided by the McKnight Foundation’s Region & Communities Program.
Program and Staff Updates

The Community GIS (CGIS) program bids farewell to undergraduate research assistant Nick Shauer, who secured a full-time job at Xcel Energy. CGIS also welcomes new undergraduate research assistant Dylan Jones, a senior geography/GIS major who will be working directly with community groups to support their mapping and data needs.

Last fall, CGIS program manager Jeff Matson presented work conducted in collaboration with the Fair Housing Equity Assessment at the Community Indicators Consortium’s annual conference in Chicago, Illinois. In November, Matson was invited by the McKnight Foundation to speak on the use of GIS in program evaluation and assessment at the Technology Affinity Group’s (TAG) annual meeting in Austin, Texas. TAG is a membership organization of foundations that promotes the understanding of how information and communications technology can help its members further their philanthropic goals.

CGIS graduate research assistant Tony Damiano copresented the Northside Asset Project’s interactive maps (nsassets.umn.edu/asset-maps.html) last November at the Policy Analysis Conference in St. Paul and at the Urban Research and Outreach-Engagement Center’s Community Day. Damiano recently won Best Interactive Map by a Graduate Student for the project from the U-Spatial Mapping Prize competition, for which he was awarded a $500 prize.

Last fall, the Hennepin–University Partnership (HUP) hosted an informational presentation for Hennepin County staff on a qualitative technique for evaluating elements of a program or project called ripple-effect mapping. Scott Chazdon, evaluation and research specialist from the University of Minnesota Extension, provided an overview of what ripple-effect mapping is and how it works. Forty-seven Hennepin County staff members attended, participated in a demonstration of the technique, and discussed possible applications.

Last year, HUP invited proposals for the first Hennepin-University Collaborative Grant for projects that involve an issue or topic of significance to both entities. The 2013 grant, in the amount of $20,000, was awarded to Lisa Thornquist from the Office to End Homelessness and Professor Maria Hanratty from the Hubert H. Humphrey School of Public Affairs. The pair hired a graduate assistant to study the risk of family homelessness during the recession by analyzing the relationship between earnings history and homelessness. In October, the grantees reported key findings, including that family earnings and income are critical protection against entry and re-entry to shelters. Improving job prospects of these vulnerable individuals in the county may provide a way to help these families secure stable housing. A comprehensive summary of these research findings is available by contacting Kathie Doty at kdoty@umn.edu.

First-year Master of Public Policy student Rachel Anderson recently joined HUP as a graduate assistant. She plans to focus her studies on public management, with an emphasis on local government and human services. Her professional experience includes managing a mental-health adult foster-care program, community mental-health work, and a variety of policy research.

The recently launched HUP interactive website provides a platform for University of Minnesota researchers, staff, and students to post information related to local government, particularly Hennepin County, and vice versa. Members can share project updates, pose questions, offer suggestions, refer people to materials and contacts, and generally exchange ideas. To register as a member, visit hup.hoop.la/join.

The Resilient Communities Project (RCP) continues its year-long partnership with North St. Paul this spring semester. RCP Director Carissa Schively Slotterback was invited to present “Research and Interdisciplinarity: The Resilient Communities Project,” to the University of Minnesota Board of Regents Academic and Student Affairs Committee in February. She emphasized the value of the program in addressing critical community priorities that require multidisciplinary expertise, as well as in creating applied research and experiential learning opportunities for students on emerging sustainability issues. In April, Schively Slotterback will represent RCP at the annual Sustainable City Year Conference in Portland, Oregon, where she will share insights from the program’s second year of operation with faculty and staff from other colleges and universities that are considering launching their own programs. RCP Program Manager Mike Greco presented the work of RCP to members of the Sensible Land Use Coalition during its Annual Roundtables of Knowledge last fall, as well as to engineers at the City Engineers Association of Minnesota Annual Conference in January.

CURA Associate Director Will Craig received a Lifetime Service Award from the National States Geographic Information Council (NSGIC). The award is the organization’s highest honor, and is presented to an individual who has enjoyed an extended professional career of service in the geospatial community, provided dedicated and distinguished service to NSGIC, and engaged in notable activities that have advanced NSGIC’s goal of efficient and effective government through prudent adoption of geospatial technologies. The award was presented during a special session of the NSGIC Midyear Conference in Annapolis, Maryland, in February. Craig was also invited by Carolyn Parnell, Minnesota’s Chief Information Officer, to serve another term on the Minnesota Statewide Geospatial Advisory Council. Craig has been active on that Council in the past, most recently leading the effort to review nominations for a governor’s commendation for exemplary activities serving the state.

Esther Wattenberg, CURA’s policy and program coordinator in family and child welfare, has launched a new monthly blog called Notes from a Cluttered Desk (cascw.umn.edu/category/notes-from-a-cluttered-desk), which premiered last November. The most recent entry is titled “How Social Justice was Inserted into the Framework of Child Welfare” Wattenberg participates in numerous local and state meetings, task forces, forums and conferences, always applying a critical eye to the practice and policy issues facing the field of child welfare. The blog provides her reflections and insights on current and reoccurring practice and policy challenges in child welfare.
Editor’s Note: The Spring 2013 issue of the CURA Reporter presented maps showing school performance in the Twin Cities for 2010–2011. The maps depicted third grade reading scores and eighth grade math scores. It should be noted that the maps showed the performance of the children attending those schools, and not the performance of the schools themselves. In this issue, we present data on high school graduation rates in the Twin Cities metropolitan area.

A young person needs a high school degree to succeed in today’s economy. Unfortunately, that goal is not achieved by all students, and the unsuccessful ones are disproportionately located in the central cities of Minneapolis and St. Paul. The district graduation rate is 53.9% for Minneapolis schools, and 73.3% for St. Paul schools.

This map presents data on the percentage of public high school students who graduate on time (i.e., within four years). Data are mapped by high school attendance area. The darkest areas graduate 90% of their students in four years. Half of Twin Cities–area high schools meet that standard. Others are somewhat below that standard—or far below.

Schools that serve low-income or immigrant communities have lower graduation rates. Parents in low-income families may not have good school histories and are less able to help their children succeed. Children from immigrant families often have language issues that slow their progress. These factors help to explain low high school graduation rates in Minneapolis and St. Paul.

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1 Neither charter schools nor public high schools that serve children across multiple attendance areas were included in this analysis.
The Minnesota Center for Neighborhood Organizing (MCNO) is hiring a full-time Community Organizer to coordinate and provide community organizing training and support to place-based organizations in the Twin Cities, and to participate in strategic partnerships that bring communities together to support each other and influence decision making.

MCNO, a program of CURA, supports place-based organizations to successfully take on local issues by developing the skills of community organizers and leaders. We envision neighborhoods and communities where people are organized to identify and tackle local issues, building vital communities that value full participation and embody racial equity and economic justice.

Essential qualifications include a B.A. in Political Science, Sociology, Social Work, or related field of study oriented to community practice, or relatable experience; three years experience community organizing in underresourced communities and communities of color for equitable social change; at least two years experience training and developing community organizers and leaders; able to work evenings and weekends; regular and efficient access to transportation to attend meetings, training sessions, and community organizing activities throughout the Twin Cities area scheduled between 8:00am and 10:00pm. Some weekend work will be required.

Selection criteria for the position include advanced understanding of community organizing theory and practice; commitment to social, racial, and economic justice; familiarity and experience with a variety of organizing training techniques and tools; strong communication skills, both written and oral; experience working with diverse constituencies; excellent facilitation skills; ability to listen, adapt, and work through complex problem solving around community issues; ability to work independently and as part of a team; excellent organizational and administrative skills; experience with Microsoft Office programs, including Word and Excel.

Applicants must apply online via the University of Minnesota Employment System (z.umn.edu/mcnocommorg). Please complete the staff application form and attach a cover letter, resume, and three references. Applications will be accepted until the position is filled. Any offer of employment is contingent upon the successful completion of a background check.

For more information, contact Ned Moore, MCNO Program Director, at nedmoore@umn.edu or 612-625-5805, or visit www.cura.umn.edu/news/mcno-community-organizer.

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