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Examining Environmental Equity in Hennepin County and Minneapolis

By Eric Sheppard, Robert B. McMaster, Helga Leitner, Sarah Elwood, and Honguo Tian



Over the last decade, there has been increasing concern about the risks to human welfare posed by releases of toxic chemicals into the environment. Catastrophic emissions receive much public attention, such as the death of Santos Fernandez on August 24, 1997 from methyl bromide poisoning in downtown Minneapolis when a nearby mill was being fumigated, or the leakage into the groundwater of up to 1 million gallons of petrochemicals from the Koch refinery in Rosemount that was reported in 1998.¹ Policymakers, on the other hand, are concerned with the general question of whether the risk of exposure to more routine releases of toxic chemicals is systematically higher for disadvantaged populations (such as people of color and poor, young, elderly, and disabled populations) and whether this reflects deliberate discrimination in the siting of facilities that manufacture, store, or use toxic chemicals.

In 1987, The United Church of Christ published a landmark report, based on a nationwide analysis, documenting the proximity of communities of color to toxic waste sites.² This study

¹The most notorious case worldwide is the explosion in Bhopal, India in December 1984 which killed 4,000 people directly and caused another estimated 2,000 deaths during the following decade.

²*Toxic Wastes and Race in the United States: A National Report on the Racial and Socioeconomic Characteristics of Communities with Hazardous Waste Sites.* New York City, 1987: United Church of Christ Commission for Racial Justice and Public Data Access, Inc.

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initiated a national debate about whether racial minorities, or poor people more generally, are disproportionately exposed to toxic chemicals, the reasons for this, and possible remedial measures. Central to this debate have been: increased public availability of information on the location of toxic chemicals, particularly the Toxic Release Inventory (TRI) database, published annually as a result of the Federal Title III Superfund Amendments and Reauthorization Act (SARA) enacted by the U. S. Congress in 1986;³ an active environmental justice movement publicizing such issues in actions ranging from struggles over particular toxic sites to nationwide forums; a flourishing of legal cases and academic studies; and establishment, in 1992, of the Office of Environmental Equity, later renamed the Office of Environmental Protection Agency. This culminated in President Clinton's Executive Order 12898 in 1994 enjoining "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations."

Complicating the debate are many ambiguities about terminology, the existence and degree of injustice, and its underlying causes. Three different, but overlapping terms appear in the debate: *environmental racism*, *environmental justice*, and *environmental equity*.

³This law, also known as the Emergency Planning and Right to Know Act, was implemented to assist communities in addressing hazardous chemicals in their neighborhoods. Primary objectives of the Act include: identifying the storage, use, and release of chemicals in communities; fostering communication between facilities handling such chemicals and local communities; and expanding emergency planning and emergency response capabilities for hazardous chemical releases.

cover photo:

The TRI site with the highest toxicity index in Minneapolis is the Superior Plating plant, across the river from downtown in the Marcy Holmes neighborhood. Scores on the toxicity index are based on the chemicals stored on site. Superior Plating, a metal finishing plant, uses hydrochloric acid for cleaning metals. In August of 1997 an acid leak occurred in the plant, spilling several thousand gallons. Plant and city emergency measures worked smoothly to prevent injury and to contain the leak. The photo shows firefighters being rinsed off after working on the chemical spill. Superior Plating is one of the companies that complies with the Emergency Planning and Right to Know Act of 1986.

© 1997 Star Tribune/ (Minneapolis-St. Paul).

Environmental racism refers to the targeting of communities of color in the siting of noxious facilities, discrimination in the enactment and enforcement of environmental laws and regulations, and the exclusion of racial minorities from decision-making bodies and environmental organizations. In contrast, notions of environmental justice and equity are generally framed to encompass not only racial, but also economic inequities. For example, one scholar defines environmental equity as "the equal application of environmental laws to ensure proper siting, clean-up...and effective regulation of industrial pollution, regardless of the racial and economic composition of the community."⁴ In order to determine whether such principles of environmental equity have been violated, a large number of studies have been carried out to ascertain empirically whether people of color and low income populations are exposed disproportionately to toxic hazards.

The findings of these studies often conflict with one another. They range from identifying strong associations between the location of minority populations and toxic facilities, confirming the United Church of Christ study, to those finding no association, and results suggesting that low income communities of color are less at risk than white and higher income communities. These very different findings are a consequence of using different measures of association, applied to different kinds of places, at different geographical scales, with different degrees of spatial resolution in the data. Even in the case of studies documenting a close geographical association between risk of exposure and communities of color, there remain uncertainties about the causes for this association because the sequence of events leading up to it may not be revealed. The community of color may have occupied the area before the noxious facility moved in, but it is equally possible that the presence of the facility depressed property prices, encouraging a subsequent in-migration of communities of color to take advantage of affordable housing. In the former instance, a legally actionable case of environmental racism exists if it can be shown that race was a factor in the facility location decision. In the latter instance, there can be no legally action-

⁴Bryant, B. 1995. "Pollution prevention and participatory research as a methodology for environmental justice." Virginia Environmental Law Journal 14(4), 589.

able case although race may still be a factor as a result of discrimination in labor and housing markets.

The CURA Study

We present here the results of an environmental equity analysis in Hennepin County and the City of Minneapolis, carried out in the Department of Geography at the University of Minnesota. A geographic information system (GIS) was used to analyze the relationship between the geographic distribution of toxic sites and the characteristics of populations living in proximity to these sites.

It is important to recognize that the geographic distribution of risk of exposure to toxic chemicals is always inequitable. Such chemicals are produced, used, emitted, and stored at selected locations, which some people are more exposed to than others. Given the nature of the concern for environmental justice in public debate, however, it is of particular concern whether communities of color or low income populations are disproportionately burdened by the risk of potential exposure to toxic chemicals, and this is the focus of our analysis. We investigate this question at a variety of scales, from the county area to the neighborhood, and draw on the historical geography of Minneapolis to account for these patterns. We also examine how different definitions both of what constitutes toxic hazards and of populations at risk affect estimates of inequity. And we explore the relevance of GIS-based neighborhood environmental inventories for mitigating environmental hazards at the neighborhood level.

As with many environmental equity studies, we begin with the Toxic Release Inventory. This is a public data set, produced annually and now published on the Internet by the federal government. For each private or public facility that is asked to report, this database records the firm's name and address and the toxic chemicals stored, processed (on or off-site), emitted, and transferred to other locations from that site. All institutions meeting certain thresholds of size and toxicity of materials are required to provide these data annually, on a voluntary basis.

The precision of these data is not always matched by their accuracy. Some firms do not report or do not report on a regular basis. Self-reported data are not double-checked by independent observers for accuracy, and even small

discrepancies of transcription in addresses or quantities of chemicals can create large errors. In addition, there are many toxic chemical emissions not included in the TRI database. Nevertheless, these are the only reasonably comprehensive and timely data available. The most recent data published at the time of this study were for 1995.

For Hennepin County, we used a GIS to locate all plants in the database by address, taking care to check their accuracy against secondary sources. Once this address matching procedure was completed, we could map the location and nature of chemicals stored, representing the sources of potential exposure in Hennepin County.

In order to examine whether disadvantaged communities are disproportionately exposed to these sites, 1990 US Census data were used. These data also can be less accurate than they seem. The 1990 data are nearly a decade old. They are less accurate for neighborhoods with fewer long-term residents (a common characteristic of low income neighborhoods and neighborhoods of color), and inaccurate for young populations (all those recorded as aged 0-5 in the 1990 census, for example, are no longer in this age group). Furthermore, the accuracy of the data even in 1990 for low income neighborhoods and neighborhoods of color is a matter of debate, given some well documented cases nationwide of undercounting by census takers in neighborhoods where they felt insecure. Again, however, these are the only comprehensive data available, and must be used with these caveats in mind. We pay particular attention to the geographic distribution of communities of color and households in poverty, but also attempt to locate those deemed vulnerable because of their age (young children and senior citizens). In order to be as precise as possible about spatial patterns, we use data at the smallest resolution for which information on race, poverty, and age is available—census block groups.

The potential exposure of these populations to hazardous chemicals is assessed by measuring their proximity to TRI sites.⁵ A series of maps provides a

visual impression of this proximity. We complement this with statistical comparisons of the income and race characteristics of residents living close to TRI sites, and those of residents who live further away. Proximity to a TRI site is measured in two ways: as living within a block group where a TRI site is located (*block group analysis*), and as living within a certain distance of a TRI site (*buffer analysis*, named after the geographic technique used to estimate these populations). In each case, the characteristics of those living within these pre-defined zones are compared to those living outside them, where the risk of exposure is defined as lower.

This classification into *near* and *distant* locations remains imperfect. Risk of exposure declines gradually with distance, and the rate at which it declines for airborne emissions will depend on wind direction and speed on a given day, on the density and quantity of the chemicals emitted, and on the height of the stack giving off the emissions. Plume dispersion models, interfaced with the GIS database, can be used for a more sophisticated analysis and we are currently applying such models to the Hennepin County TRI database. In addition, estimates of the risks posed by TRI sites depends on how emissions are measured. Many studies assume that all TRI sites pose equal risk. Our analysis compares this approach with a more nuanced estimate of the toxicity of actual emissions from different sites. We also incorporate into our analysis the location of other hazardous sites not included in the TRI data, and discuss how this modifies the landscape of inequity.

Inequity in Hennepin County

Maps 1 and 2 depict the spatial distribution of TRI sites and non-White population by block group for Hennepin County and for the City of Minneapolis. Although the use of the category non-White largely excludes the Hispanic population from the analysis, that population represents a very small number for Hennepin County.⁶

For Hennepin County (Map 1), the concentration of communities of color in Minneapolis overlaps with the largest cluster of TRI sites. More generally, this map shows that the concentration of both TRI sites and the non-White population decreases westward and north-westward from the City of Minneapolis.

⁶Most Hispanics are classified by the U.S. Census as White.

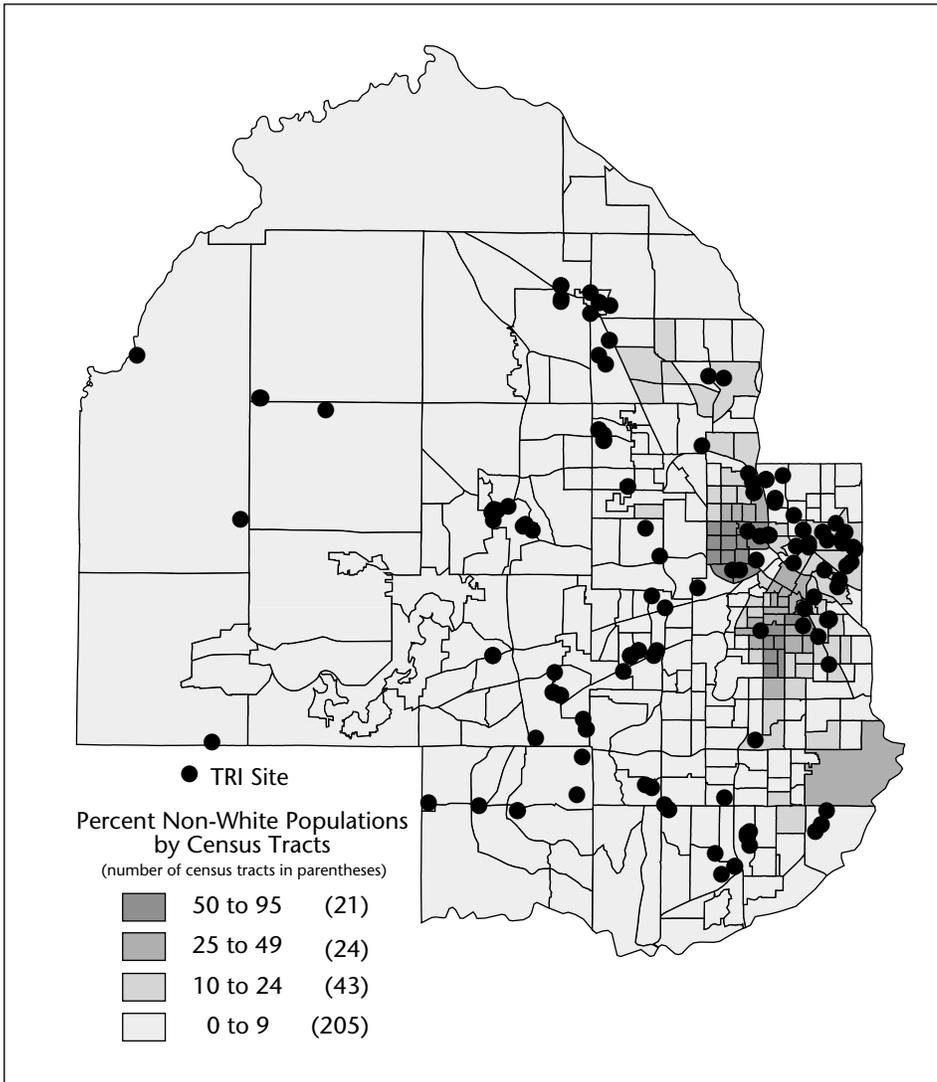
One could make the argument, therefore, that at this scale there is evidence of environmental inequity, as both TRI sites (nearly one-half) and populations of color are concentrated in the central city.

For the City of Minneapolis (Map 2), a different pattern emerges. TRI sites are disproportionately concentrated in northeastern Minneapolis, whereas communities of color are concentrated in the near north side and in south Minneapolis, suggesting a converse relationship whereby TRI sites are closer to White communities.

These contrasting conclusions at different geographic scales show how difficult it is to generalize about environmental inequity. In fact, these contrasting patterns can be explained by paying attention to the geographical processes of urban development underlying them and, in particular, to which kinds of processes dominate intra-urban patterns at different scales. The positive association between TRI sites and communities of color at the county scale (Map 1) reflects the history of suburbanization by selected population groups. The central city emerged early as a center of manufacturing, with areas zoned for this purpose. In part in reaction to the environmental consequences of living close to industries and the pollution and congestion associated with them, and taking advantage of new transportation technologies and of federal subsidies for highway construction and home purchases, better-off White residents began to move out of the central city rapidly after the Second World War. It is well documented that suburbanization was much easier and more attractive for White and middle-income people than for people of color and those in poverty. Indeed, suburbanization too often was also a means to escape inner city neighborhoods with new African American and other immigrants.

Once suburbs were established, a variety of exclusionary and discriminatory practices prevented people of color and those in poverty from moving to the suburbs. Inner city communities became, in turn, places of protection and self-reinforcement for ethnic groups excluded from mainstream society. Although such discriminatory practices have been outlawed (if not eliminated), these processes, reinforced by the limited opportunities for low income households in the market for new housing, have been inscribed in the urban landscape. The presence of

⁵The TRI records emission of chemicals into the air, the ground water, and the soil. In 1995, 98 percent of the tons emitted by TRI sites in Minneapolis were released into the air, and given the data for all the years since 1987 (when reporting began) this figure approaches 100 percent. Since air emissions are the principal source of potential exposure in Minneapolis, geographic proximity to TRI sites is a reasonable approximation of risk of exposure.



Map 1. Toxic Release Inventory Sites and Percent of Non-White Population, Hennepin County, 1995

communities of color outside the central city remains minimal (Map 1).

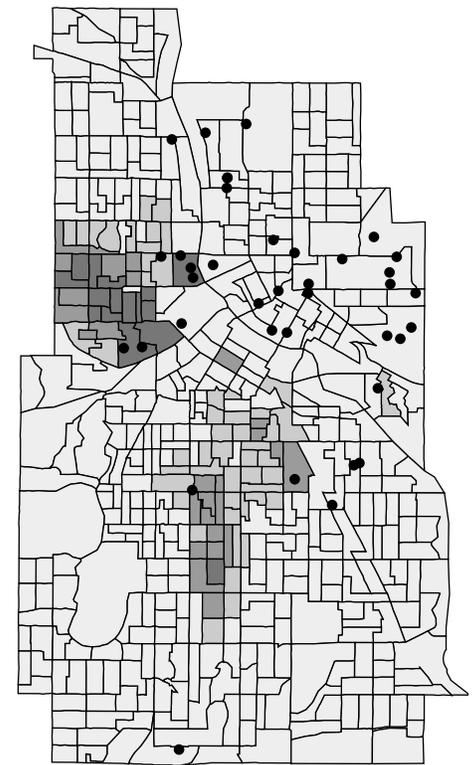
The contrasting association between TRI sites and communities of color in Maps 1 and 2 can thus be accounted for by the way in which, at a metropolitan scale, suburbanization enabled more wealthy and White households to escape the many problems of the inner city, including those of industrial pollution. Industry has also been suburbanizing, as can be seen in the locations of TRI sites in Bloomington, Eden Prairie, Plymouth, St. Louis Park and Brooklyn Park (Map 1). Nevertheless, it is harder for dirty or hazardous industries to gain acceptance in suburban communities, and the greatest concentration remains in the central city.

Inequity Within Minneapolis

As our analysis of suburbanization suggests, inequities within cities can be driven by differences in income, or class, as much as by racial differences. A common question asked in studies of these patterns is whether the disadvantages faced by communities of color are simply a result of their low income, or also a result of their race. In the area of environmental justice this has important legal consequences. While firms can be taken to court for environmental racism, there is no legal redress for discrimination on the basis of class.

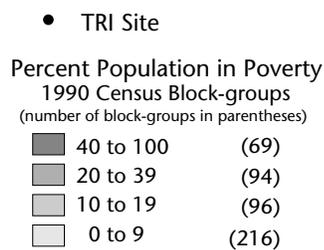
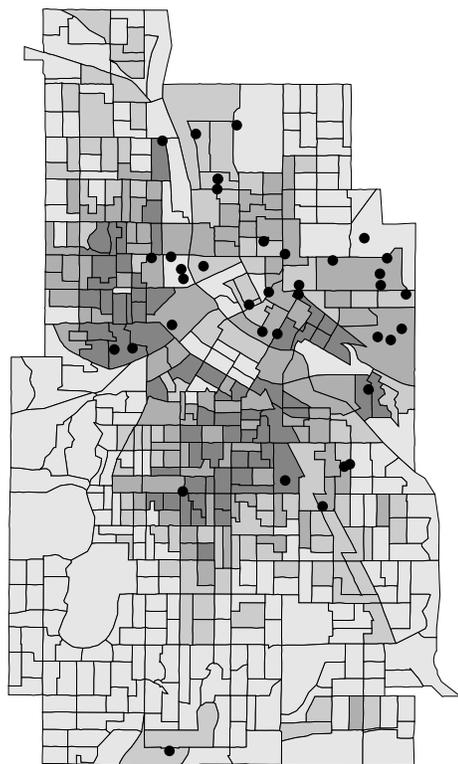
We examine here the relationship between poverty (a crude surrogate for class), race, and proximity to TRI sites in Minneapolis. Concentrated poverty, defined as the case where at least 40 percent of the population is below the

poverty line, has been adopted by the federal government as an indicator of the presence in inner cities of a truly disadvantaged underclass—often in ghetto-like communities of color. Map 3 visualizes the relationship between TRI sites and concentrated poverty (irrespective of race) for Minneapolis, and can be compared directly with Map 2.



Map 2. Toxic Release Inventory Sites and Percent of Non-White Population, Minneapolis, 1995

Map 3 shows a stronger visual relationship between TRI sites and poverty than Map 2 shows between TRI sites and the non-White population. This is primarily because of the poverty that exists within the largely White population of northeast and southeast Minneapolis. It is clear, then, that race and poverty interact in complex ways. This can be seen in Table 1, which records the percentage in poverty for TRI block groups and non-TRI block



Map 3. Toxic Release Inventory Sites and Percent of Population in Poverty, Minneapolis, 1995

groups. TRI block groups are those block groups in which at least one TRI site is located. Poverty is higher in block groups containing at least one TRI site, for all demographic groups. In some cases, however, the difference is not great, and indeed the relative difference

is greatest for those groups whose overall level of poverty in Minneapolis is relatively low. For the White and Hispanic populations, the percentage below poverty is almost twice as high in TRI block groups and for young children aged 0-5 poverty was almost 50 percent greater in 1995. For the three largest communities of color (African-Americans, American Indians, and Asian Americans) this difference ranges from 7 to 23 percent.⁷

The conclusion that the difference in poverty levels between TRI and non-TRI block groups is in fact more significant for the White population than for any other group can be accounted for by analyzing the historical geography of residential districts in Minneapolis. Northeast Minneapolis, a milling district that attracted other industries taking advantage of the dense network of railway lines serving the mills, became home after 1880 to a White working class population with a strong central and eastern European ethnic identity. The ethnic cohesion and racial attitudes of this community made it very stable and resistant to African American immigrants who began to migrate into areas north of the downtown in the 1930s. By contrast, African Americans were able to penetrate the Jewish community on the near north side, whose residents moved to the western inner ring suburbs, creating a social and geographical space for African Americans. This was reinforced by the construction of public housing projects after 1960. Paradoxically, therefore, and in distinct contrast to generalizations about environmental racism in the central city, the particular industrial geography and history of residential mobility in Minneapolis and the

⁷Poverty levels by demographic group for Minneapolis as a whole are very close to the values for non-TRI block groups, because these contain the vast majority of the Minneapolis population.

stability and resistance of the northeast White working class community to populations of color has meant that they still live near a cluster of TRI sites.

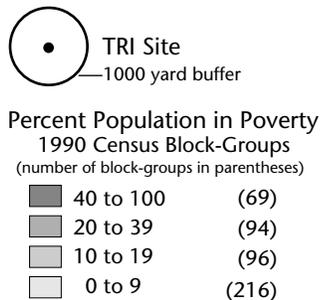
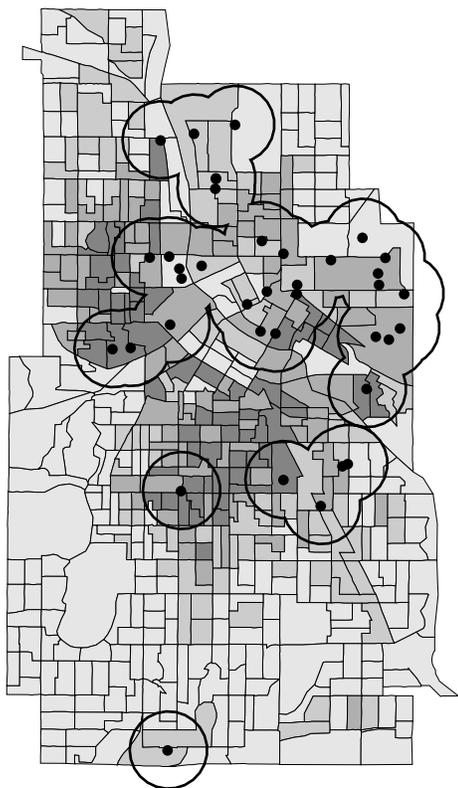
The use of block groups to define the location of vulnerable populations is the conventional approach, and easy to compute, but suffers from several disadvantages. First, when TRI sites are located on the edge of a block group, then populations outside that block group, but just across the street from the facility, are not counted as part of the exposed population. Second, for districts as small as block groups even when the facility is in the center of the block group, any emission will affect populations in neighboring block groups. An alternative approach, possible with the analytical capabilities of GIS, is to create buffers, or circular zones, around each TRI site, and to use information on the location, the size, and the population characteristics of block groups overlapping the buffer to estimate the characteristics of the population in that zone. Map 4 depicts such buffers for TRI sites in Minneapolis, with a radius of 1,000 yards. Table 2 provides information about poverty levels inside and outside the buffers. In this case, the results for the buffer are similar to those for the block groups (Table 1), in part because nearby block groups have similar characteristics, and in part because the area enclosed by a 1,000 yard buffer is similar in size to block groups.

Analyses focusing on the location of TRI sites alone neglect some important attributes of toxic emissions: the type, amount, and toxicity of chemicals found at each site. Clearly, hazards are greater where amounts stored are greater, or where the chemicals used are more toxic. Inclusion of this information can alter the findings. Map 5 shows the locations of TRI sites weighted by the toxicity of the chemicals stored and

Table 1. Percentage of People in Poverty by Race or Age for Block Groups with and without Toxic Release Inventory Sites, Minneapolis, 1995 (number of block groups)

	White	African American	American Indian	Asian American	Hispanic	Population aged 0-5	Total
TRI block groups (38)	22	43	64	52	47	47	30
Non-TRI block groups (437)	11	40	52	45	26	32	18

Source: Modified from McMaster, R.B., H. Leitner and E. Sheppard, 1997. "GIS-based environmental equity and risk assessment: methodological problems and prospects." *Cartography and Geographic Information Systems* 24(3), 183.



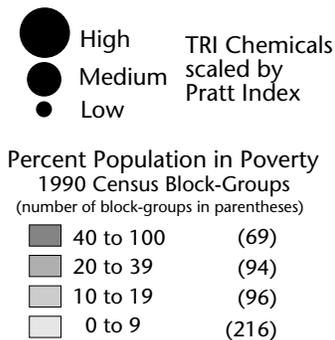
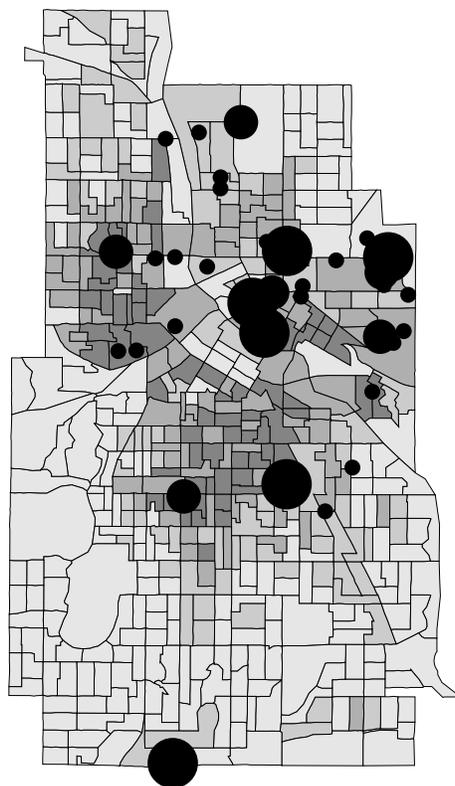
Map 4. Toxic Release Inventory Sites with 1,000 yard Buffer Zones and Percent of Population in Poverty, Minneapolis, 1995

emitted there. We used the Pratt Index,⁸ which takes account of the estimated health effects of different chemicals, to weigh the toxicity of the different sites. This map shows that potential exposure to hazards in 1995 is of particular concern in the Marcy Holmes neighborhood, an area of primarily white middle class residents.

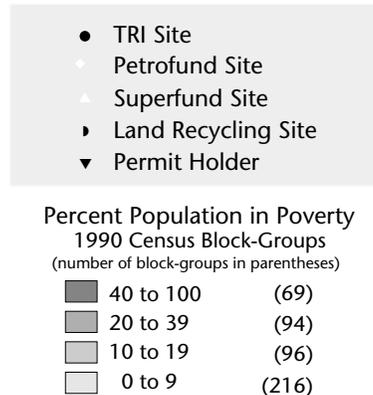
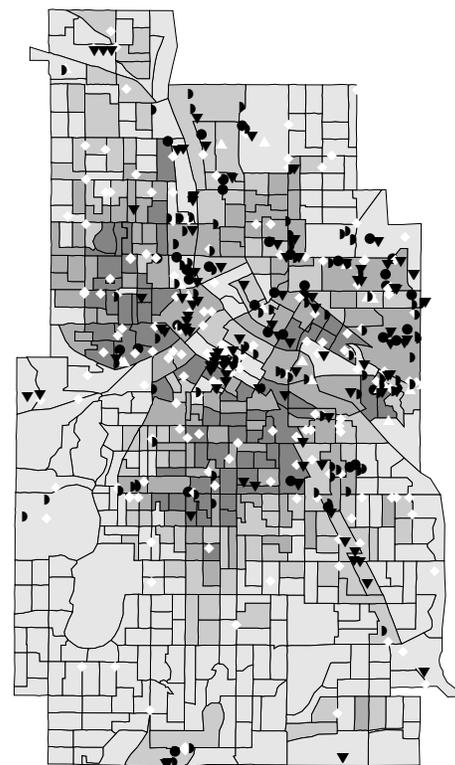
As mentioned before, TRI sites represent only one source of hazardous chemicals, frequently analyzed simply because of the availability of a nationwide database. Using data from the City of Minneapolis, this can be supplemented by information on the location

⁸Pratt, G.C. et al, 1993, "An Indexing System for Comparing Toxic Air Pollutants based on their Potential Environmental Impacts." *Chemosphere* 27(8), 1359-1379.

of Superfund sites, Petrofund sites, and land recycling sites (Map 6). Each of these types of sites poses different potential hazards and, because chemicals are released into the ground, poses risks at different distances around the site. Petrofund sites, with leaking underground storage tanks, are frequently old gas stations, and thus are distributed throughout the city, but particularly in older neighborhoods. Land recycling sites, where contaminated soil is being recycled, and federally designated Superfund sites are found in the near north side and in east Minneapolis in areas of formerly heavy manufacturing. They are somewhat more oriented towards the near north than are the currently active TRI sites. They also tend to be clustered



Map 5. Scaled Index of Toxic Release Inventory Sites and Percent of Population in Poverty, Minneapolis, 1995



Map 6. Five Types of Toxic Sites and Percent of Population in Poverty, Minneapolis, 1995

in areas of poverty, but with less bias towards areas of White poverty.

GIS-Based Neighborhood Environmental Inventories

Environmental equity analysis at the neighborhood scale provides little insight into the broader county-wide context of inequity in potential exposure, which frames the particular experiences of that neighborhood. Nevertheless, GIS can be used to aid the compilation of environmental inventories at the neighborhood scale, and these inventories have a number of advantages over larger scale GIS-based environmental equity analysis.

Table 2. Percentage of People in Poverty by Race or Age for 1,000 Yard Radius Buffer Zones around Toxic Release Inventory Sites, Minneapolis, 1995

	White	African American	American Indian	Asian American	Hispanic	Population aged 0-5	Total
Within TRI buffer zones	20	50	63	58	39	53	31
Outside TRI buffer zones	9	36	46	34	23	24	14

First, at the neighborhood scale it is easier to collect detailed information which is not available in public data sources, and which may address local concerns about toxic chemicals more adequately than publicly available data. Examples of local data collection efforts range from surveys of lead contamination in the soil, done by the Lead Collaborative in the Phillips neighborhood, to assessments of air quality conducted by residents with portable monitors as they move about their neighborhood. In addition to primary data collection, fieldwork at the neighborhood scale also allows the accuracy of secondary databases to be checked.

Second, GIS-based neighborhood environmental inventories create the potential for community-based monitoring of environmental hazards. Third, providing local residents access to reliable information, and to ways of mapping environmental hazards through GIS-based environmental inventories, may be helpful in negotiations between the community and businesses located in the community. Through such devices as good neighbor agreements, the local community and businesses may be able to collaborate in reducing emissions of toxic chemicals.

Since the fall of 1996, with support from Neighborhood Planning for Community Revitalization at CURA, we have been working with two Minneapolis neighborhood organizations to develop a GIS-based environmental inventory. Besides providing GIS technology to the organizations, we have been compiling a neighborhood-scale GIS database of publicly available information on environmental hazards as well as population characteristics, schools, and day care centers. Data collected by the neighborhood organizations has been mapped using GIS.

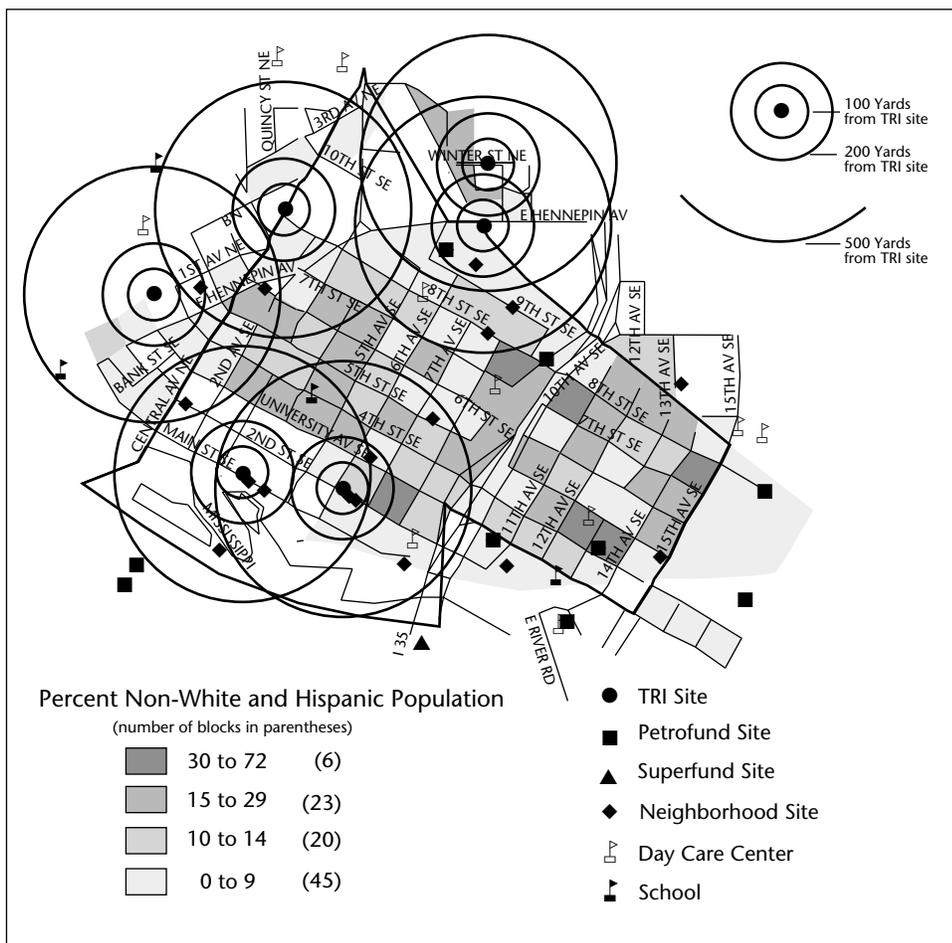
The possibilities for neighborhood involvement to enrich our understanding of potential exposure to toxic chemicals can be seen in Map 7, which

supplements public data on TRI, Petrofund, and Superfund sites with information on hazardous sites collected by the Marcy Holmes neighborhood organization in the summer of 1996. The map shows how the addition of other locations, identified by the community as places where toxic chemicals may be stored and emitted, creates a denser pattern of potential sources of exposure than that derived from public databases. It also shows the proximity of schools, community centers, and day care centers to these locations. This allows

the community to assess the proximity of vulnerable groups to hazardous facilities.

Conclusion

Environmental justice in the Twin Cities is a complex geographical question with many dimensions. The work reported here is part of an ongoing project, based on limited information about the locations of both emissions and populations that may be exposed. Yet even at this stage of the analysis it is clear that a full understanding of existing problems and



Map 7: Neighborhood-Based Environmental Inventory for Marcy Holmes Neighborhood, Minneapolis, 1995-96

their potential resolution requires bringing together a county, a city-wide, and a neighborhood perspective. Giving representative organizations at all scales the ability to collect the information pertinent to their concerns, the tools to display and analyze this information, and the capacity to negotiate on an equal basis to resolve differences, will be essential to ensuring that residents' concerns are heard and real risks mitigated.

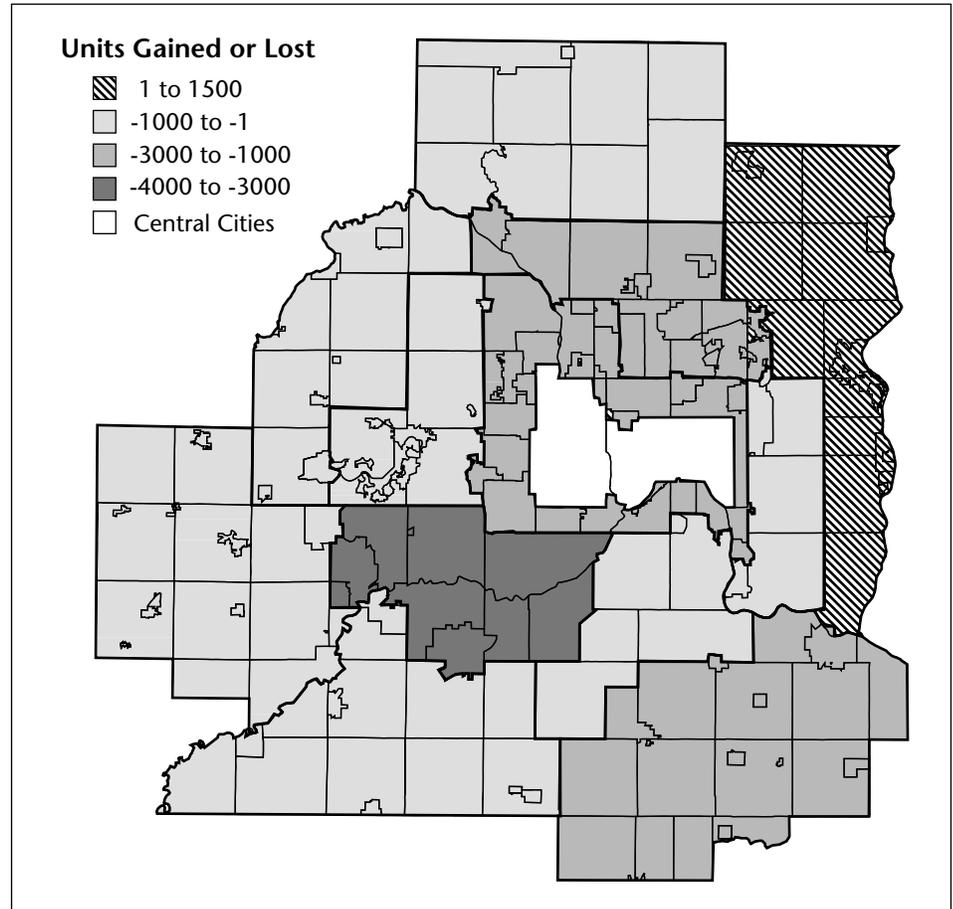
■ Eric Sheppard is a professor of geography at the University of Minnesota who specializes in urban and regional development, economic geography, GIS and society, and spatial analysis. Robert McMaster is an associate professor of geography at the University of Minnesota. His areas of expertise include environmental risk assessment, GIS and environmental justice, spatial analysis, and public participation GIS. Helga Leitner is a professor of geography at the University of Minnesota specializing in urban geography, political geography, population geography, and modern Europe. Sarah Elwood is a doctoral candidate in geography at the University of Minnesota. She received the CURA-Borchert Fellowship in 1997-98 and is completing her thesis on public participation GIS in the Powderhorn Park neighborhood of Minneapolis. Honguo Tian is a doctoral candidate in geography at the University of Minnesota. He has recently completed an MS in computer science. His special areas of study are environmental risk assessment and GIS.

The study presented here was funded by a special grant from CURA.

Whoops!

Because of a problem with computer interfaces in our last issue of the *CURA Reporter* (April 1999), a map of the Twin Cities metropolitan area was printed with incorrect shadings designating units of affordable housing that have been gained or lost under the Livable

Communities Act. The map on page 16 of Edward Goetz's article "Losing Ground: The Twin Cities Livable Communities Act and Affordable Housing" should have looked like the map below.



University-Migrant Project Moves

The University-Migrant Project has moved to a new administrative home with the Migrant Health Promoters Project on the St. Paul Campus. Jose Garcia is currently in charge of the project, which continues its community outreach with funding from CURA. The project continues to support activities of

the Farmworkers Action Network. Chicano Studies has assumed responsibility for the interdisciplinary class "The Migrant Experience in Minnesota." The new address of the University-Migrant Project is 320E VoTech Bldg., 1954 Buford Ave., St. Paul, MN 55108, phone 612-624-6756.

Phosphorus and the Lakes

by Jenni A. Swenson and Terry H. Cooper



Though the phosphorus content of lakes fluctuates greatly, 100 percent of the lakes in Scott County, such as Fish Lake, above, have averaged higher than the Minnesota Pollution Control Agency's phosphorus limit for primary contact.

The lakes in the Twin Cities area are some of our most precious natural resources. A year-round source of varied recreational activities and a large part of this area's physical beauty, the lakes are home to many plant and animal species that are a vital part of our diverse ecosystem. The lakes have proven to be remarkably durable in the face of increasing environmental pressures, but they are not invincible. Partly due to human activity, the level of phosphorus in many of the area lakes has become excessive, and this now threatens not only the purity of the water but the health of the lakes themselves.

Phosphorus is a naturally occurring element in lakewater, and in its natural quantities it presents no danger—in fact, it is an essential nutrient. But when a body of water contains excessive nutri-

ents, it encourages excessive biological growth. The process of nutrient enrichment and the subsequent increase in productivity is called eutrophication, which is itself a natural phenomenon. All lakes are at some stage in the eutrophication process, but eutrophication in urban areas is dangerously accelerated and magnified by human alteration of the landscape. High levels of phosphorus in a water body, for example, can cause algal blooms, high growth of aquatic weeds, a decrease in water clarity, and a depletion of oxygen. Under these conditions, the lakes we cherish become fetid and unsightly.

Phosphorus in the Lakes

The Minnesota Pollution Control Agency has repeatedly tested the phosphorus levels of metropolitan lakes, and Table 1 shows the averaged results of

this testing over a twenty-five-year period, grouped by counties in the seven-county Twin Cities metropolitan area. The agency has established a limit for primary contact with lakewater (such as recreational activities) of 0.04 parts per million (ppm) total phosphorus, and has determined that eutrophication occurs at 0.10 ppm. But in Washington County, almost half (48 percent) of the lakes exceed the limit for primary contact, and that is the lowest percentage of any county in the group. In the other six counties at least 79 percent of the lakes tested—100 percent in Scott County—exceed this limit.

To reduce the level of phosphorus, and thereby slow the eutrophication process, lakes are commonly treated with alum (aluminum sulfate), which removes phosphorus from the water by combining with it to form an aluminum

Table 1: Phosphorus Content in the Lakes of Twin Cities Area Counties, 1970-1995

County	Average total phosphorus in parts per million (ppm)	Percentage of lakes exceeding EPA limit of 0.04 ppm
Scott	0.16	100
Carver	0.15	83
Anoka	0.13	79
Dakota	0.12	88
Hennepin	0.11	85
Ramsey	0.11	84
Washington	0.06	48

Source: Minnesota Pollution Control Agency

phosphate precipitate. These treatments act quickly, improving the trophic state of the lake within a week to ten days, and they can reduce the amount of internal phosphorus loading for as long as ten to fifteen years. A total of 178,800 pounds of aluminum were added to lakes in the Twin Cities metropolitan area over the past five years, with an average application rate of 18.6 grams per square meter. Table 2 summarizes the treatments performed. Hennepin County is by far the largest user of alum applications, having used 153,800 pounds, or 86.4 percent of the total alum used in the area during this period. However, while this remedy may alleviate the problem for a finite period of time, it does not address the issue of ongoing phosphorus inputs.

Phosphorus Sources

Phosphorus is carried mainly through soil erosion, surface water runoff, and, to a lesser extent, by wind erosion or leaching. Most of the overall phosphorus input to the lakes travels through storm drains and originates from areas where the land is highly impervious to water absorption, from highly sloping areas, and from developing urban areas. Much of the phosphorus runoff in urban areas occurs either in the spring or the fall. In the spring, the melting snow on still-frozen soil increases surface runoff, which includes decaying tree seeds and sand applied to streets the previous winter. During the autumn months, after the leaves have fallen, decaying organic matter becomes a significant source of phosphorus as streets, gutters, and roads act as conduits for bringing the material into nearby water bodies.

Also contributing to the phosphorus

load are animal waste and construction activities. A recent study of the Seattle area estimated that 52 percent of the annual phosphorus input into the lakes came from waterfowl feces.¹ Construction, especially that associated with highway building, can also be a major source of phosphorus-carrying sediment. Reported annual sediment losses from residential construction sites range from six to twelve tons per acre.

Soil Phosphorus and Lawn Fertilizers

Phosphorus in the soil encourages turf growth, and therefore it is a common component of commercial lawn fertilizers. But how much phosphorus is necessary for an adequate lawn?

¹J.K. Bland, "A gaggle of geese...or maybe a glut," *Lakeline* 16 (May 1996), North American Lake Management Society: 10-11, 45-047.

Through the University of Minnesota Soil Testing Lab, we analyzed soil samples submitted by area homeowners from 1991 through 1994 and found that most of the Twin Cities metropolitan area has sufficient soil phosphorus levels to support turf growth.

In fact, in most of the samples tested, soil phosphorus levels are very high (see Table 3). Out of the 1,920 samples, 73 percent tested very high for phosphorus (>25 ppm), and at this level there is less than a 10 percent probability that plants will respond to phosphate fertilizer applications.² Twenty-four percent of the samples tested medium to high for phosphorus (10-25 ppm), and only 3 percent tested low to medium (<10 ppm). Figure 1 gives a spatial distribution of these three categories across the Twin Cities area.

Levels of phosphorus adequate to support plant growth are present in many Minnesota soils because the soils have formed from parent materials that are naturally high in phosphorus. When residential soils show higher phosphorus levels than the native soil, this suggests that these soils are retaining phosphorus from fertilizer applications.

During the summers of 1995 and 1996, we established test plots in North Oaks, Minnesota for the purpose of finding out what effect the application

²Material sold as fertilizer is required by law to provide an analysis of content, and by tradition phosphorus in fertilizer is listed in the analysis as phosphorus pentoxide, or P₂O₅, an oxide of phosphorus commonly called phosphate.

Table 2: Alum Use in Twin Cities Area Lakes and Ponds, 1994-1998

Water Body	County	Rate, in grams of alum per square meter	Total dose, in pounds
Carlson Lake	Dakota	7.5	800
Olson Lake Estates Pond	Washington	8	700
Meadow Lake	Hennepin	8	800
Heine Pond	Dakota	6	550
Blackhawk Lake	Dakota	10	1,450
Pond LP-44	Dakota	10	200
Long Lake	Hennepin	30	60,000
Cedar Lake	Hennepin	27	35,000
Lake of the Isles	Hennepin	18	10,000
Schwanz Lake	Dakota	8-10	1,100
Bracket's Crossing Country Club (5 ponds)	Dakota	9 (avg.)	600
Lake Susan	Carver	30	19,600
Langdon Lake	Hennepin	70	48,000

Note: All were surface applications.
Source: Minnesota Department of Natural Resources

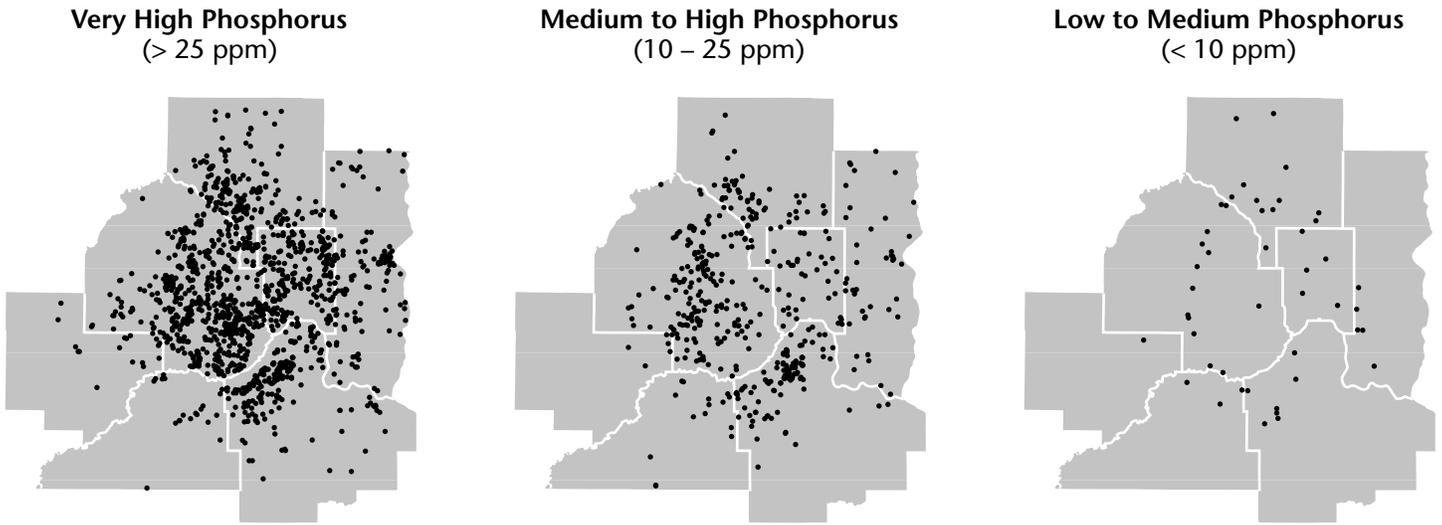


Figure 1. Phosphorus Content in Soil Samples from Twin Cities Area Homeowners, 1990-1994

of phosphate fertilizer has on turf growth. Plots were selected based on low existing levels of phosphorus in the soil, and different application rates of phosphate fertilizer were administered throughout both growing seasons. Three rates of application were tested: zero phosphorus, the rate of phosphorus recommended by the University of Minnesota Soil Testing Laboratory (0.5 ppm), and double the recommended

rate of phosphorus (1.0 ppm). We collected and analyzed data on the turf-grass color, density, and uniformity throughout the 1995 and 1996 growing seasons.

We found that adding phosphate fertilizer did not affect the color of turf-grass, did not increase grass density, and did not affect the lawn's uniformity. The overall visual quality of the lawns remained the same among all three

treatments, implying that existing soil phosphorus, even in small quantities, may be adequate for turf growth.

Additionally, in order to examine the retention of phosphorus in the soil, the plots were tested for phosphorus levels seven times throughout the 1995 and 1996 growing seasons (Figure 2). In the plots that received Treatment 2 or Treatment 3 (0.5 ppm and 1.0 ppm phosphorus, respectively), we found a trend in phosphorus accumulation in the top one-inch layer of soil. On plots not treated with phosphorus (Treatment 1), the trend was a slight reduction of soil phosphorus—2-3 ppm over the two growing seasons.

Table 3: Phosphorus Levels in Twin Cities Area Soil Samples

County	Average total phosphorus, in parts per million (ppm)	Percentage of samples with very high phosphorus levels (>25ppm)
Anoka	45.5	77
Carver	37.0	68
Dakota	37.0	63
Hennepin	44.7	75
Ramsey	52.9	85
Scott	32.0	53
Washington	43.8	74

Source: University of Minnesota Soil Testing Lab

Phosphate Fertilizer Regulation

If phosphorus degrades water quality and is already present in the soil, should phosphate fertilizer be banned? In December 1996, the Minneapolis Park and Recreation Board agreed that a phosphate fertilizer ban would heighten public awareness, but felt there was little evidence that a ban would lead to lower phosphorus runoff.

Also, phosphorus is particularly important during early grass seedling growth and development stages. It is often advisable to add phosphorus when starting a lawn, even if soil phosphorus levels are already adequate. Although a ban would reduce phosphorus pollution from misapplication, it would penalize homeowners trying to establish new lawns as well as those few who have low levels of soil phosphorus. Cities such as Plymouth restrict phosphate fertilizer applications to either newly established lawns, during the first growing season,

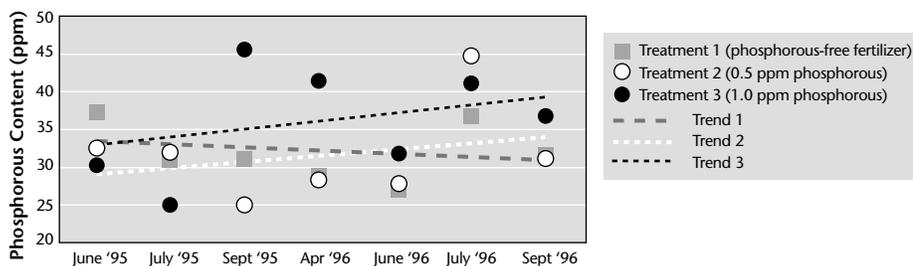


Figure 2. Phosphorus Content in the Soil Following Fertilizer Applications



Most of the overall phosphorus input into the area's lakes travels through storm drains that carry surface water runoff containing such things as decaying tree seeds, leaves and grass clippings as well as sand and excess lawn fertilizer.

or to soils that tests confirm need phosphorus. Otherwise, all phosphate fertilizer applications in Plymouth must be from natural or organic fertilizers, such as yard compost.

Although a reduction in phosphate fertilizer applications may reduce soil phosphorus levels over time, Minnesota soils will never be completely depleted of phosphorus. Natural organic matter and parent material that is naturally high in phosphorus could provide adequate levels of phosphorus to support turf growth for many years. Only in rare instances would phosphate fertilizer be needed for turfgrass growth and, as our study shows, applying phosphate fertilizer would probably not improve the quality (color, density, and uniformity) of the turf.

In light of these findings, the unavailability of phosphorus-free fertilizers to homeowners is a major concern. A compilation of Minnesota Department of Agriculture records from 1996 shows Minnesota non-agricultural fertilizer sales to be 35,718 tons—approximately 2,215 tons of which was phosphate. As shown in Figure 3, only 26 percent of all fertilizer sold in Minnesota contains less than 1 percent phosphate, while 21 percent of all fertilizer sold in Minnesota contains over 10 percent phosphate.

The Homeowner's Role

John Schultz, of the Department of Soil, Water, and Climate at the University of Minnesota, completed a study for CURA on homeowner lawn fertilizer applications during 1994.³ He concluded that, although soil test results were high, Twin Cities area homeowners were still applying to their lawns an average of 0.59 pounds of phosphate fertilizer per 1,000 square feet every year. In addition, he found that homeowners did not follow phosphorus soil test recommendations, which resulted in over-application of phosphate fertilizer. He hypothesized that this behavior was due to the misunderstanding of soil test recommendations, the unavailability of the fertilizer grade recommended by the soil test, and the market-driven urge to buy fertilizer irrespective of soil test recommendations. Schultz also reported that most fertilizer purchases are due to product loyalty, low cost, or a friend's recommendation, and that general information available to homeowners regarding how they can manage and reduce phosphorus additions to their lawns is not being heeded.

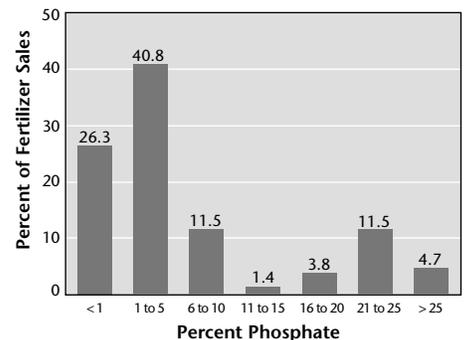
When phosphate fertilizer is used appropriately, however, even on established lawns, it results in only a small

³CURA Reporter XXV (2):6-9, May 1995.

percentage of phosphorus runoff because it binds quickly to soil particles. In fact, lawn clippings may be the largest source of dissolved phosphorus in runoff from lawns (up to 70 percent), regardless of fertilizer applications. A pollution risk occurs only when fertilizer is misapplied onto driveways, sidewalks, or other impervious surfaces where it is susceptible to surface runoff. Unfortunately, a recent study conducted by the Minnesota Department of Agriculture as part of the Lake Harriet Watershed Awareness Project found that most homeowners in the Lake Harriet area did not properly dispose of phosphate fertilizer spilled on driveways and sidewalks. In these cases, the excess fertilizer was swept up only 40 percent of the time, leaving the rest to be hosed off, swept into the street, or ignored.

Through efficient land use practices, such as the proper application of fertilizer, homeowners can prevent contributing to the phosphorus load. For a small fee (\$7.00), they can have their lawns tested by the University of Minnesota Soil Testing Laboratory to see if there is a need for phosphate fertilizer. Homeowners can make sure that phosphate fertilizer is swept up after a spill and ask their garden centers for phosphorus-free fertilizer. Also, keeping streets, parking lots, storm sewer inlets, catch basins, and outlets free from debris has been shown to significantly reduce phosphorus additions to water bodies. Leaf removal and street sweeping have been shown to decrease the overall total phosphorus in urban runoff by 56 percent.⁴ For more information, there are a number of excellent publications available on phosphorus

⁴"Urban Stormwater Treatment for Water Quality," <http://www.chebucto.ns.ca/Science/SWCS/swt.html>, Soil and Water Conservation Society of Metro Halifax, Nova Scotia: 1996.



Source: Minnesota Department of Natural Resources

Figure 3. Phosphate Content of Fertilizer Sold in Minnesota

management practices for homeowners through the University of Minnesota Extension Service, such as *Responsible Fertilizer Practices for Lawns* (FO-6551-GO), *Turfgrass Management Practices for Protecting Surface Water Quality* (BU-5726-F), *Lawn Care Practices to Reduce the Need for Fertilizers and Pesticides* (FO-5890-B), and *Preventing Pollution Problems from Lawn and Garden Fertilizers* (FS-2923-GO).

Recommendations

If properly applied, phosphate fertilizer is not a significant source of phosphorus, although lawn clippings and other organic yard waste may be. Current recommendations, however, encourage leaving lawn clippings on lawns, partly due to concerns about overfilling landfills. Further studies into homeowner lawn care practices should be developed. In addition, a review of the usability of soil test reports given to homeowners, and an analysis of educational literature, would ensure that homeowners understand the lawn care information disseminated to them.

A lack of phosphorus-free fertilizer is the main source of over-application, and businesses providing lawn care products need to address this issue. Additional major reductions in the phosphorus load can be accomplished through street sweeping and cleaning, leaf removal, and the use of building mitigation structures during construction. Erosion control practices should be a required part of the planned construction project before a building permit is issued.



Despite the findings that only in rare instances would phosphate fertilizer be needed for lawn growth and that it would be unlikely to improve the quality of existing turf, only about one quarter of the fertilizer sold in Minnesota contains less than 1 percent phosphate (the middle number listed on the fertilizer bag).

Homeowner education, plus regulation and enforcement of lawn care policies, should become part of every municipality's abatement plan. Also, discouraging over-habitation and removing waterfowl feces may considerably

reduce phosphorus inputs to those lakes with an overabundant population of waterfowl.

Finally, government controls may help reduce phosphorus loads, but these are often more costly than other alternatives or impractical to implement in developed urban areas. While further studies to develop a phosphorus "budget" for the metropolitan area and more consistent phosphorus-testing protocols are recommended, the most significant impact would probably come simply from raising the level of awareness and concern among homeowners and policy makers. With little effort, we can keep phosphorus levels in check and go a long way toward keeping our lakes beautiful far into the future.

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Managing Urban Growth: the Metropolitan Council's Politics and Performance

by William C. Johnson

The Metropolitan Council quietly observed its thirtieth birthday in 1997 amid much speculation as to its future. The national conversations which had then begun over the impacts and costs of urban sprawl had been presaged by ongoing debate in the Twin Cities metropolitan area for many years. It was natural at that time to ask what the council had achieved in those three decades. If some rational form of urban growth management were possible, it would be evident in that experience. If, on the other hand, the region's growth had not been controlled, or was misdirected, one could have low expectations for doing it anywhere else.

My study of the council's growth management policies and their implementation was conducted in the fall of 1997 and early 1998. The complete study has been published by CURA and this article presents an overview of the findings. The primary finding is that the Metropolitan Council's efforts, in concert with the region's state and local authorities, have resulted in some degree of restraint on the costs of suburban expansion and, perhaps just as important, have created an arena in which regional policies such as land use controls, transportation, housing, and protection of open space can be debated and formulated.

Six main conclusions emerged from my study of how the Metropolitan Council has worked in the past and present. They are presented here along with the directions they suggest for the council's future and in light of the council's new membership and chair and the early policy stands of the Ventura administration.

1. Transcending Symbolism

The council's survival during thirty years of ups and downs is due to its dual role as symbol and problem solver. Its very existence is a statement that there are common public interests in a large and diverse metropolitan area, that its

issues and choices affect all residents and businesses, and that some approaches to them are better for all in the long run than others. The council's *Regional Blueprint* seeks to capture the public imagination by portraying the region's localities as compatible and on the verge of a higher quality of life.

The council's challenge is to translate this symbolism into an everyday reality. The organized political interests in the region recognize the need for planning on the large scale, if only to ensure that public facilities are in place when needed to service new neighborhoods. But many other interests affected by urban growth, either positively or negatively, have the right to be heard as well. The council stands as the broker between them, despite its limited powers over actual municipal and county choices. To eliminate the council would not make metropolitan planning unnecessary but instead transfer it to other players whose accountability is uncertain. The consensus that the council ought to exist is rooted in the public acceptance both of the concept of limited regionalism and the pragmatic solutions that it helps to bring to problems.

2. A Solid Record

The council's accomplishments in the realms of growth management and housing have been modest yet significant in their context. The state's decision makers did not seek a radical reform of policy or planning practice when they established the council. They recognized the need to allow the growth of all urban land uses, and in view of the market and geographic setting, expected most of it to be on the suburban fringe. What they did not want, and intended the council to avert, was wasteful extensions of sewers and highways, unnecessary destruction of valuable open space and farmland, and major projects by cities and counties that did not conform to any land use plan. It was not to be a full-scale metropolitan government, but neither was it

to be a mere advisory body without any effect on the pace and direction of growth. Its creators walked a narrow line between competing designs, confident that if their product showed flaws later, they could make the adjustments needed.

One accomplishment of the council is that it has provided a public arena in which issues of metropolitan growth and governance can be discussed. Most other regions lack this. The state legislature has provided this only sporadically, and often failed to rise above contests between very localistic views. The five governors during the council's era have not given metropolitan governance a high priority either.

A further role of the council in growth management, housing, and related policies is to orchestrate the many decisions made by other governments, corporations, and nonprofits that constantly recreate the region. For example, in late 1997 the council helped organize "urban economic summit" meetings to focus on strategies to renew abandoned industrial brownfields. It brought together organizations that have stakes in the renewal but would not otherwise be in contact with one another. The council has limited staff time to form such networks on its own, but it can create arenas for them and publicize the opportunities.

More substantive achievements are difficult to measure. The policies of the council have been blended with many other influences, both supporting and hindering. There was less urban growth outside the Metropolitan Urban Service Area (MUSA) line than many observers expected after the controls mandated by the Land Planning Act of 1976 went into effect, and the council's restraints on extending sewers to those areas was probably an important reason. The extent to which this policy accelerated building outside the seven-county area cannot be reliably determined, since many other factors are involved. The land development market is sensitive to a host of changeable conditions, many

of them set by individual municipalities and townships according to their own standards.

In the realm of housing, a significant number of modest-cost homes were built in the suburbs, which in several cases would not have existed but for council policies. The dominant political climates and land use traditions tend to endure over time, and no radical changes in Twin Cities housing policies have occurred. The search for alternatives remains alive, though, and the Livable Communities program enacted in 1995 stands as a monument to those concerns.

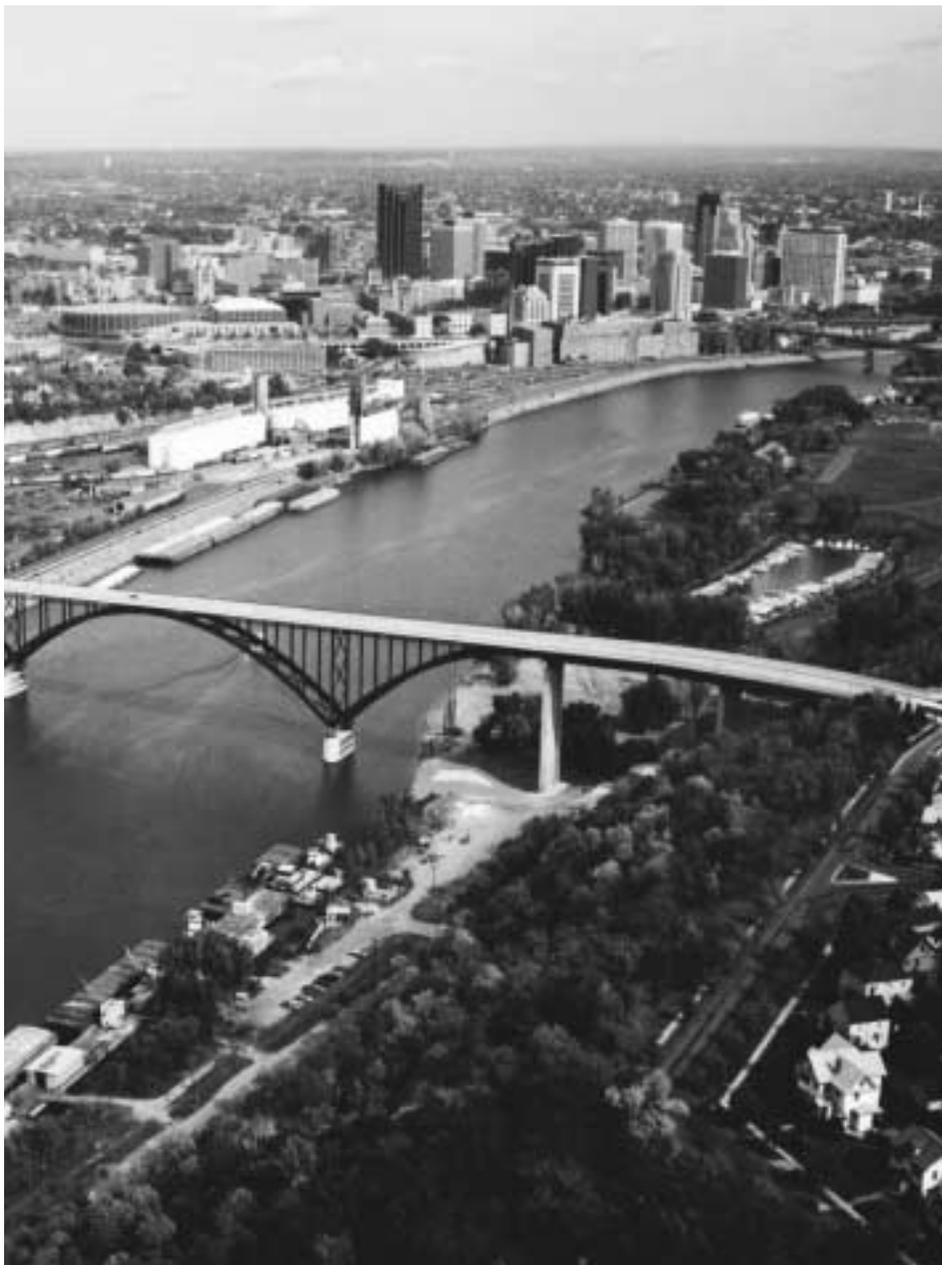
3. A Healthy Cooperation

The local governments whose cooperation is essential to the success of the council's policies have largely conformed to them. These relationships have not been consistently good over the thirty years. The first half-decade was marked by much friction as local elected officials and administrators perceived council staff members as arrogant and unreceptive to local viewpoints. This discord also reflected a lack of consensus over the exact role that the council would play, as well as local suspicion that "those planners downtown" were trying to dictate to them.

Relationships improved after John Boland was appointed chair in 1973. He sought to transform the council's image into that of a service agency. The growing volume of research by council staff and its dissemination to local communities was influential in shaping policy. In subsequent years the relationships varied, depending on which staff member was contacting which local official on which issue, but the policy tensions certainly did not disappear.

Since 1994, reports indicate an improved level of mutual understanding, crucial to the implementation of the *Regional Blueprint*. Still, the interactive process requires some regional/local differences in policy and implementation, and even healthy working agreements should not erase them entirely.

Even so, a residue of animosity remains, which is probably strongest in the outermost suburbs of the seven-county region. Those communities face a paradox in their planning: they often want higher residential densities than the council recommends, yet they complain about traffic congestion when the new residents arrive with their cars. Sprawl is both an evil that many suburbanites deplore and a means of growth in property values and tax base that



The Metropolitan Council was not created as a full-scale metropolitan government, but it was meant to be more than an advisory body and to have an effect on the pace and direction of metropolitan growth.

landowners and city officials favor. This ambivalence in attitudes will persist no matter how the council and local lawmakers respond.

4. An Expanding Frontier

An emerging challenge to the council's regional diplomacy is the urban growth outside its seven-county jurisdiction. Lower land prices and easy access to metropolitan area jobs has spurred a strong demand for homesites in a semi-circle of counties from Wright in the northwest clockwise to Pierce, Wisconsin in the southeast that are not part of the council's territory (see Figure

1). In 1996, the total of residential building permits issued in those seven "outer" counties was 72 percent higher than in 1990, while the increase in the council's part of the region was only 8 percent. And where residents go, industrial and service jobs follow. Legislators from the outer counties strongly resist extending the council's controls over their land. However, some planners and administrators in these counties foresee the costly road and sewer expansions that will result if they do not manage growth efficiently.

The *Regional Blueprint* expresses concern over this extended growth and

offers the council's data and planning support to the local units there. Its members and staff have held conversations with rural representatives on planning coordination, but no agreements have been reached. Those municipal, township, and county officials argue that the land use standards and

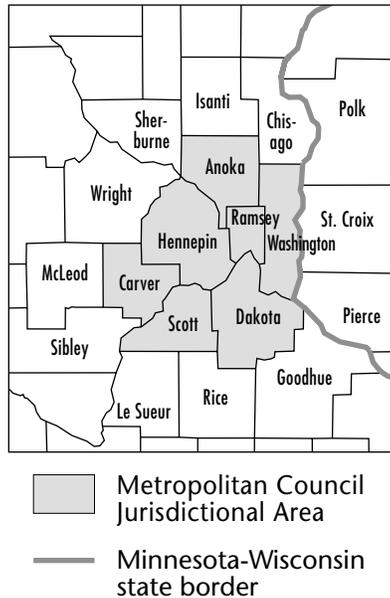


Figure 1. The Metropolitan Council's Seven-County Jurisdictional Area and Surrounding Counties

restrictions which may be suitable to the urban core have no place in their communities. Indeed, most welcome employers that add to their tax base and the new residents that will accompany them.

In 1997, the legislature recognized the need to rein in urban sprawl and restrain growth in public investment costs outside the seven-county area. The Community-Based Planning Act set statewide goals for resource conservation, economic development, orderly infrastructure expansion, livable community design, and intergovernmental cooperation. It offered modest grants to groups of cities or counties to coordinate such planning. This act remained controversial after its enactment, however. The 1999 session of the legislature substantially cut funding for its programs in fiscal year 2000, and repealed it entirely as of June 30, 2001.

The Twin Cities region must be defined broadly, since "urban is as urban does." As long as the council's authority is limited to its 1960s-era boundaries, the state legislature must choose what, if any, powers and mandates to provide for the local units in the growing metro-

politan fringe areas. Those outer counties may not need the same regulations as those in the council's jurisdiction, but as they grow they must seek effective controls to protect their environments and living amenities.

5. The Limits of Power

The political power structure of the Twin Cities region both permits and restrains the Metropolitan Council's activity and poses conflicting demands on it. One can liken the politics of the region to a network in which various groups and influential persons interact on a more or less equal power level to promote certain goals or to prevent others from reaching them. In the council's early days, a strong alliance of business and civic leaders set it in motion with moderate policies for public services and growth management.

The trend of the past decade has been toward greater dominance by the governor and state politics in general. The council, for this reason, was unable to generate an independent agenda for the legislature's consideration. Under such conditions, local officials did not see it as acting on its own. The more that regional residents see it as an arm of the state, the less willing they may be to back its policies.

Over the years, influences have shifted to apply pressures in different directions. Governor Carlson, during his eight years in office, represented one force, while Governor Ventura is coming to present another. Representative Myron Orfield and his allies who support stronger growth controls constitute a very different influence. In the middle of the field are the council members, the legislators, and the leading local officials who negotiate the actual legal and policy changes. There is a delicate balance of power based on common understandings of how the region should grow and provide for its citizens, and while that can change marginally with a new governor or chair, this larger network is relatively stable.

For this reason, public policy in the Twin Cities area must steer a course between politically unacceptable (and perhaps administratively unworkable) rigid controls on local growth choices and a merely advisory approach that makes no difference in the end. Promoting cost efficiencies, one council priority, is a noncontroversial goal in itself. Protecting sensitive areas and valuable farmland also draws wide support. Yet, there are many tradeoffs to

be negotiated since every land use choice entails gains for some and costs for others. This has required the legislature, the council, and local governments to move cautiously, avoiding the political minefields threatening each step.

6. Prospects for Influence

In view of the evidence, the council can expect to operate within a politically defined window of opportunity. This will chiefly involve seeking continued orderly growth in both the central cities and suburbs while serving the ambitions of the private market and local residents, yet placing some restraint on excessive costs. The council lacks the power to undertake extensive preservation of open space, for example, though with



Suburban expansion continues into the open farmlands around the Twin Cities. The Metropolitan Council provides an arena in which the issues of metropolitan growth can be discussed.

cooperating organizations it can offer incentives to do this. It also lacks the financial resources for major residential and industrial renewal in the central cities and inner suburbs, yet it can help assemble funds from others and orchestrate plans and action. This approach is what both supporters and critics call "consensus-based realism," doing as much as the broad spectrum of regional interests can accept as necessary and beneficial.

Where the council can make a substantial difference is in reshaping that consensus. Former Chair Curtis Johnson described the council's mission

as that of a broker “selling equity shares in ideas.” In a region whose economy and technology are so rapidly developing and regrouping, citizens need a growing supply of possibilities for creative action on transportation, housing, employment, and other challenges. With the aid of the media and organizations such as the Citizens League, the council can solicit the broadest range of opinions and stimulate the informed public to support new initiatives.

The Big Questions

The future development of the Metropolitan Council must be viewed in the light of five central questions. First, what means of governance can we design that will be true to our democratic political processes and to the core values of society? Some citizens argue that creation of an authority that centralizes power on the regional scale violates the democratic principle that public decisions should be made as “close to the people” as possible. When city and county authorities are doing their jobs honestly and efficiently, they reason, there is no reason to transfer power to a larger entity which could cost more and be less responsive to constituents. Proponents of metropolitan government have been unable to convince many that a unified authority would be more democratic by being better able to provide the regional facilities and services the public demands.

The concept on which the Metropolitan Council is built is that a regional agency can enable the governments “closer to the people” to make more forward-looking choices on the futures of their communities. It can supply information on their likely growth prospects and the price of servicing that growth. Also, the “people” who should be consulted on these public decisions are not simply those of each municipality taken separately but residents of the larger region who pay the costs and depend on the facilities. This is the logic of placing choices on sewers, surface water management, open space, and transportation in an authority with wide geographic scope.

The council was not intended, at its creation, to be a representative governing body like the city and county governments. Although the districts which members serve reflect the population distribution throughout the region, the council is primarily an administrative agency, and this ambiguity is reflected in modern debates. Representa-



The Green Corridor Project is linking publicly owned land with private parcels, withheld from development, to create a corridor of open space in Washington and Chisago Counties. The project, aided by a state grant, is an example of the kind of collaboration between public and private institutions that is essential if open lands are to be retained as designated in the council's Regional Blueprint. Washington County, the Land Stewardship Project, the Minnesota Farmers' Union, the Minnesota Land Trust, and the Trust for Public Land are all cooperating in the project.

tive Orfield has asserted that it is the second largest government in the state, after Hennepin County. This is not the view or intention of the governor and many legislators, for whom the council lacks the policy making powers of a “true” government.

A second question is, how can the public sector's collaboration with nongovernmental institutions of societal cooperation and public service be protected and promoted? Most governments today are seeking new relationships with businesses and nonprofit entities that will enlarge and enrich public services. Local governments have much experience with park and library volunteers, housing collaboratives, economic revitalization by chambers of commerce, and contracts for services of all kinds. Yet the frontier for cooperation is broader, particularly for community development corporations, local foundations, religious groups, and multi-member partnerships.

One example of public/private collaboration is the Green Corridor Project. This kind of effort is essential if the areas designated in the *Regional Blueprint* as “permanent agricultural” and “permanent rural” are to remain so for the long term.

The council can aid private groups as well as local governments with its long-

range policy guidance, research, and readiness to set up “tables” at which the stakeholders can negotiate. The very concept of livable communities, so integral to the council's agenda, calls on a rich network of citizens with the talent and commitment to turn abstract policies into everyday reality.

Third, how can tensions and conflicts between various political arenas be managed and resolved? The metropolitan arena is a beehive of strongly advocated and defended interests. In the large social context, these interests will never be fully united and in a changing society we should not expect them to be. Federal, state, and local authorities represent their publics with different priorities, and a conscientious city council or county board properly takes a more localistic view on growth-related issues than does a state agency. The Metropolitan Council, as well, is charged by state law with forming and defending a regional perspective, that may not be easily reconciled with a particular local one.

The highly fragmented American system of government only works as well as it does because its members are ready to bargain and compromise when necessary. Its autonomous governments are experienced at seeking accommodations with one another when their

responsibilities intersect. The council has thirty years of such accommodation, and its *Regional Blueprint* envisions that to continue. It will do so most fruitfully if the council provides what it is best at producing: timely and accurate research data that enable all partners to gain a common understanding of reality, and well-crafted goal statements that embody common interests to the greatest extent possible.

Fourth, what policy decisions are best made from the perspective of technical competence and thus should be isolated from the turmoils of pluralist politics? We assume that decisions in cases where there are accepted standards for quality and efficiency can be made by specialists who are competent in the given field. Thus, federal and state agencies and local authorities construct waste treatment plants, set transit schedules, and design airport terminals with a lot of autonomy. But should the allocation of land for future urban growth be treated as a similarly "technical" issue? Are there objective criteria for placing affordable housing in communities? Perhaps so, but these types of technical decisions will heavily impact constituents, who will naturally seek to influence them.

Urban planning blends elements of both technical and political choices. Neither legislators nor the public wish to give up their access to choices that have real political content. Thus they limit technical planners to advisory roles and surround them with others who can examine and challenge their recommendations. The planning coalition that considered both a totally new international airport and enlargement of the present one recognized the value of this blended approach. The council planning staff, together with professionals in other governments, expressed the "technical" viewpoint, while council members and their constituencies in local and state politics provided the political input. This balance, though uneasy at times, is essential.

Fifth, how can the debates over institutions and policies and evaluation of their performance enable citizens to learn how to improve their governance? One of the goals of the *Regional Blueprint* is to build a civic infrastructure that will involve citizens from all demographic groups in decision making and deliver sufficient information to enable them to do this intelligently. Similarly, it seeks to enlarge the pool of regional leaders. It is vital to this end that the *Regional Blue-*

print and other council plans serve to stimulate debate. In most cases, its plans do not have the same purpose as those of local governments, consisting as they do of forecasts and frameworks to guide the specific plans of local decision makers. Any plan, thus, should be framed in sufficient detail as to stimulate informed dialogue over alternatives and consequences. Even rejected alternatives should be retained in the collective memory for later reconsideration.

The council has had mixed success in drawing citizen participation. It has found it easier to communicate with already organized groups than to bring new voices into the arena. A further deterrent is that most citizens see no reason to influence the abstract principles and criteria on which council policies focus; their attention is only on proposals that tangibly affect their neighborhoods. Planners use maps and charts as essential tools, but many citizens find these symbols hard to relate to realities that they can see. Even so, the council's citizen education efforts appear to reach a crucial minority of influentials, either directly or through other channels.

A major concern for many observers is that the news media do not give regional policy issues the kind of coverage that would provide citizens who are not otherwise informed with an appreciation for what is at stake. Media editors tend to portray these issues in terms of how individuals are affected rather than to frame them as institutional questions with broad impact. As they compete for their market share, the news outlets understandably provide what they believe their audiences want to read or see, rather than making judgments as to what the public ought to know. Growth management lacks "bite" as a public issue, and even affordable housing draws attention only in how such units affect a specific site.

One proposed remedy for the council's lack of visibility and accountability is direct election of its members, with its chair as a regional "mayor." This reform passed the legislature in 1994 but was vetoed by Governor Carlson. Certainly this move would thrust the council into political conflict and raise the stakes in its choices. But many observers are not anxious to increase the council's powers to regulate land use; for them its present role is as strong as it needs to be. This uncertainty will only be settled if a new consensus emerges over how metropolitan growth is to be directed and what role the council is to play in it.

Governor Ventura endorsed a stronger Metropolitan Council presence early in 1999 when he appointed Ted Mondale as its chair. He also replaced thirteen of its sixteen members with newcomers, drawn from across the political and occupational spectrum. The press noted that most of them have strong interest in transit development and can be expected to back the governor's own interest in light rail systems. At the same time, growth pressures at the edges of the metropolis are increasing, as the Twin Cities' dramatically low unemployment rate attracts job seekers. As the council continues to review municipal plans, it must make hard choices on new residential subdivisions and commercial and industrial developments that may not conform to its *Regional Blueprint*.

In a world of shared power, where governance is increasingly flexible and collaborative, regional cooperation is recognized as the most workable approach for most problems. The Metropolitan Council is the centerpiece of this governing process in the Twin Cities area but not its controller. The council's future is most promising in its ability to bring together the many competing elements into creative alliances, and to provide local authorities with the guidance and incentives by which they can control their own futures. However its members and chair are chosen, they must see this as their primary mission.

■ William C. Johnson is a professor of political science at Bethel College and a member of the Planning and Zoning Board of the City of Lino Lakes. He co-authored (with John Harrigan) *Governing the Twin Cities Region* (1978), the first book-length study of the Metropolitan Council. He is also the author of *Public Administration: Politics, Policy and Practice and Urban Planning and Politics*.

William Johnson was a Visiting Scholar at CURA in 1996-97, while he was working on the study presented here. This article is largely taken from his recently published *Growth Management in the Twin Cities Region: The Politics and Performance of the Metropolitan Council* (Minneapolis: CURA, 1998). Copies of the book are available free-of-charge from our offices at the University of Minnesota.

Project Awards

To help keep our readers up to date about CURA projects we feature a few capsule descriptions of new projects underway in each issue of the *CURA Reporter*. In this issue we present the winners of CURA's faculty competition for Interactive Research Grants in 1999-2000. These grants are made possible with funds provided by CURA and the Vice President for Research at the University of Minnesota. They are designed to encourage University of Minnesota faculty to carry out research projects that involve significant issues of public policy for the state and that include interaction with community groups, agencies, or organizations in Minnesota. The results of the winning projects are published in the *CURA Reporter*.

Also presented here is the student project that won the Borchert Fellowship Award for 1999-2000. This award is given each year to the best proposal from an advanced student in geography for study of an issue of importance to the citizens of Minnesota. The award, made jointly by CURA and the Department of Geography, honors John R. Borchert, Regents Professor Emeritus and the first director of CURA.

► **Increasing School Success for Children of Color.** The academic performance of children of color is in a state of crisis. Concerned community organizations have created many new initiatives to help combat academic failure, but do they work? Can they be replicated? Do they work better for some groups than others? Samuel Myers, Jr., director of the Roy Wilkins Center for Human Relations and Social Justice, will be examining what characteristics define successful community-based programs and can they be incorporated into existing long-term education programs. CURA's grant will be used in the portions of the three-year study that involve extensive interaction with the community, including focus groups and interviews with various stakeholders.

► **Preventing Violence through Basketball.** Midnight Basketball leagues began in the late 1980s as a way of diverting inner-city youth from crime and building healthy social skills. Douglas Hartmann, a professor of sociology, is working on a collaborative project with the Minneapolis Stay Alive Project, which sponsors two basketball programs: Shoot Hoops, Not Guns for largely American Indian youth and Ghetto Basketball Association (GBA) for largely African American youth. He will help with the development and evaluation of Stay Alive and also with developing and refining the GBA program while collecting concrete, behavioral data on the problems and possibilities of sports-based youth outreach programs.

► **Teaching the Dakota Language in an Immersion Program.** Preserving and regenerating indigenous languages has been a major thrust across the United States in the last five or ten years. A professor of linguistics, Bill Johnston, is working with the Upper Sioux Community, near Granite Falls, as they establish a pre-school immersion program in the Dakota language. He is collaborating in the process of training the tribal elders who will work with the pre-school children. At the same time he is documenting and analyzing how the program is being created. Along with creating a narrative description of the process, which will be of use to other tribes as well as scholars, he expects to prepare a bibliography on other immersion programs for indigenous languages.

► **Increasing Literacy in Urban Schools.** Often children living in low income urban areas struggle to gain a basic competency in reading. Two effective strategies for literacy programs are the use of community volunteers to increase the amount of individual attention that students receive and extended day-extended year programs that increase students learning time. Two professors in the College of Education and Human Development—Marika Ginsburg-Block and Susan Watts-Taffe—

are teaming up to document and evaluate the literacy program at an elementary school on the near northside in Minneapolis that uses the extended day-extended year program. What they learn will be translated into recommendations for a district-wide model of literacy programming and a model for training and supporting community literacy volunteers.

► **The Impact of Tribal Trust Lands.** Conflicts over land continue to be at the core of relationships between American Indians and Whites in this country. Placing new lands into tribal trusts removes them from tax rolls and from state and local regulations. The 1999-2000 Borchert Fellow, Laura Hansen, is studying the impacts that tribal trust lands have had on both the American Indian and White communities involved. She is examining both legal and economic impacts. The legislative history of trust land law and the impact of trust lands on the economies of tribes and the surrounding communities will be traced through a number of recent case studies in Minnesota. She will also map the historical succession of economic and population characteristics on Indian reservations, trust lands, and their surrounding areas.

Credits

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New CURA Publications

Challenges and Opportunities Posed by the Reform Era.

Mark E. Courtney. An Occasional Paper of the Center for Advanced Studies in Child Welfare. A joint publication of the Center for Advanced Studies in Child Welfare and CURA. 1999. CURA 99-3. 16 pp. Free.

In the midst of the era of welfare reform our nation is also going through a period of deep reform in child welfare services. A professor of social work from the University of Wisconsin-Madison and affiliate of their Institute for Research on Poverty argues that these two reform movements need to be designed so that the two systems—workfare and child welfare—work collaboratively in a coordinated system. This paper was presented at the “Reconciling Welfare Reform with Child Welfare” conference in February 1999 at the University of Minnesota.

CURA Update '99. 1999. CURA 99-1. 49 pp. Free.

CURA's programs and projects from 1996 through 1998 are presented here in capsule form. A list of CURA publications and reports, as well as publications resulting from CURA projects, is also included.

Realidades Suburbanas: Latinos en el Condado de Dakota or Suburban Realities: Latinos in Dakota County.

HACER. A joint publication of HACER and CURA. 1999. CURA 99-2. 61 pp. Free.

A bilingual report from HACER (Hispanic Advocacy and Community Empowerment through Research) presents the experience of Latinos in Dakota County, just south of St. Paul's West Side neighborhood. HACER estimates that more than 10,000 Latinos live in the county. They examined demographic information, conducted face-to-face interviews with both Latinos and Anglos, and conducted focus groups with Latinos who work or live in the county. Photographs and quotes from the interviews help to convey why Latinos come to Dakota County, the strengths and the problems they have found there, and what is helping them in this suburban world. This is the second research report to be produced by HACER. Their first—*Realidades Latinos or Latino Realities*—presented a new picture of the thriving Latino community in south Minneapolis.

CURA publications may be ordered by phone (612-625-1551), on the CURA Publications Order Form on the last pages of *CURA Publications in Print* in this *CURA Reporter*, or through our website (<http://www.umn.edu/cura>).

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CURA connects University faculty and students with the people and public institutions working on significant community issues in Minnesota.

CURA helps:

- faculty and students produce more relevant research on critical issues,
- students strengthen their education through practical experience,
- government agencies and community organizations get the assistance they request,
- and the University of Minnesota fulfill its land grant and urban missions.

The CURA Reporter is published quarterly to provide information about what CURA projects are doing. This publication is available in alternative formats upon request. Please call Judith Weir (612) 625-7501.

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