Growth Pressures on Sensitive Natural Areas

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Growth Pressures on Sensitive Natural Areas in DNR's Central Region

A REPORT BY AMEREGIS AND THE MINNESOTA DEPARTMENT OF NATURAL RESOURCES | 2006
AMEREGIS is a research and geographic information systems (GIS) firm which documents evolving development patterns in U.S. metropolitan regions, and the growing social and economic disparities within them. Founded by Myron Orfield, Ameregis is dedicated to integrating GIS mapping and traditional research methods to inform decision-making. With its partner, Metropolitan Area Research Corporation, Ameregis assists individuals and groups in fashioning local remedies that address these concerns.

MINNESOTA DEPARTMENT OF NATURAL RESOURCES (DNR) is a state agency with a tri-part mission to work with citizens to conserve and manage the state’s natural resources, to provide outdoor recreation opportunities, and to provide commercial uses of natural resources. The agency’s Conservation Agenda (2005) identifies ten top natural resource conservation priorities, including continued habitat loss, fragmentation, and degradation due to ongoing land use decisions that do not adequately integrate natural resources into planning, budgeting, and development.

Acknowledgments
The project partners Ameregis, CR Planning, and DNR graciously thank the Bush Foundation for its support of this project. Principals on this report Tom Luce, Ameregis, and Sharon Pfeifer, MnDNR, wish to acknowledge all who commented or provided expertise at various stages of the effort. Special thanks go to DNR staff Jim Berg and Jan Falteisek for their work on the groundwater section, and Josh Williams for creation of the sensitive natural areas map; Ameregis staff Jessica Burke and Aaron Timbo; Metropolitan Council staff Ann Beckman, Rick Gelbman, and Todd Graham; Jean Coleman, CR Planning; Jim Erkel, Minnesota Center for Environmental Advocacy, Mark Lindquist, the Minnesota Project; and Marvin Bauer and Brian Loeffelholz of the University of Minnesota Department of Forestry for providing the urbanized land data.

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EXECUTIVE SUMMARY

This assessment of DNR’s 17-county Central Region was conducted by Ameregis and the Minnesota Department of Natural Resources with a grant provided by the Bush Foundation. The purpose of the research and analysis was to place the region’s remaining sensitive natural areas into the context of future regional growth and development so that more informed approaches to development and conservation are possible.

The methods used in the assessment included preparation of two natural resource maps based on existing data; analysis of a variety of social and fiscal factors, using cities and townships as the units of analysis; application of cluster analysis to group similar communities together based on social, fiscal, and physical attributes; and creation of alternative regional growth scenarios to examine how projected growth could affect the region's remaining sensitive natural areas.

Historically, natural resources have been an important source of growth in Central Region’s economy. Although today’s economy relies much less on raw materials for growth, resource-related natural amenities make very significant contributions to the area’s quality of life. Lakes, rivers, streams, wooded areas and the wildlife they support are magnets for residential development both in the metropolitan area and beyond. Undeveloped natural areas also fill many other important, and often free, functions, including water and air purification, flood and stormwater control, wildlife habitat, and outdoor recreation.

Fortunately, Central Region still retains a diversity of natural resource areas. GIS mapping suggests that about 40 percent of the region’s total area remains in forests, grasslands, lakes, rivers, streams, and wetlands classified by this work as sensitive. Yet while Central Region still retains natural habitats, some with very high ecological integrity, only 14 percent of the region’s sensitive natural areas is publicly protected. In the 11-county metropolitan area, for example, 12 percent of the sensitive area is classified as urbanized, and 16 percent is protected from development. This means that nearly three-fourths of the remaining sensitive natural areas in the metropolitan area are potentially threatened by development.

This threat is real. Of greatest concern are those sensitive, undeveloped, and unprotected natural habitats at the fringe of the 7-county core region and in the neighboring “collar” counties. During the 16 years between 1986 and 2002, the amount of land classified as urban in the 7-county core region grew significantly more quickly (one and one-half times) than did population and population growth is expected to continue. Nearly 900,000 more people (or 460,000 new households) are expected in the 7 core counties by 2030 and another 100,000 people are projected for the four collar counties.
The context for this growth is a highly fragmented metropolitan area with hundreds of municipalities exhibiting a wide range of fiscal and social characteristics. The suburbs, often portrayed as uniformly prosperous, are in fact a very diverse group of communities. Based on the community classification developed for this work, just under half of the metropolitan area's households live in places showing various signs of fiscal stress, while only a fifth live in places with robust tax bases and few social stresses. The remainder (or about a third of households) lives in relatively low-density, middle-class communities with modest fiscal resources.

According to current projections, it is in this last group of middle-class communities where the majority of new growth is likely to occur. These communities also contain the lion's share of the region's remaining sensitive natural areas. Home to just 33 percent of the 7-county area's households in 2003, these communities are projected to receive 67 percent of regional growth between 2003 and 2030 and they contain 85 percent of the sensitive areas in the region that remain undeveloped and unprotected. In addition, a number of these communities, especially those on the edges of the region, face the possibility of water supply constraints, due to the changing nature of the region's aquifers and the availability and predictability of potable water sources needed to meet new demands resulting from growth. Beyond the core region, water-bearing bedrock aquifers disappear and groundwater supply needed to meet new demands resulting from growth becomes less predictable and reliable.

Pressures on sensitive natural areas in the non-metropolitan counties differ, but are directly related to growth and demographic changes in the metropolitan area. Continued income growth coupled with the onslaught of the baby boomer generation is expected to continue to drive demand for retirement homes near natural amenities.

Not surprisingly, many growing communities in DNR's Central Region will face hard choices between accepting development and conserving sensitive natural areas. If projected future growth in the region occurs at housing densities like those in the recent past, then a significant portion of remaining sensitive natural areas will be at risk. Protecting sensitive natural areas is costly. Much of the cost is borne locally in the form of lost tax base. The benefits of protection, on the other hand, are spread much more widely across the broader region and the state.

From the point of view of a single community in the process of making local land-use planning decisions, the benefits of conserving sensitive natural areas will, therefore, rarely exceed the potential fiscal benefits of development. Because the benefits of conservation are shared on a regional scale, so the costs must also be shared.

To ensure conservation for the future in such a diverse region will require a concerted effort to:

- Plan collaboratively across jurisdictions and disciplines for natural resource conservation;
- Share in the costs of conservation by expanding existing programs such as the Fiscal Disparities Program or by augmenting and pooling relevant funding streams to strategically protect sensitive resource areas;
- Encourage and provide incentives for municipalities to plan for development in ways that consume as little undeveloped sensitive land as possible; and
- Support research and monitoring to update and extend knowledge on the interaction between sensitive natural resources and development.
**Introduction**

The purpose of this research was to determine through GIS mapping where sensitive natural areas still remained in the Minnesota Department of Natural Resources (DNR) Central Region and to assess how expected growth patterns in the region might affect these areas. Specifically, the intent was to identify areas where natural resources might be most at risk from projected growth and development in order to assist local, regional and state decision-makers in understanding the impending tradeoffs between regional growth and natural resource conservation.

DNR’s Central Region contains a variety of different types of communities, with very different sorts of pressures on sensitive natural areas. To better understand some of these differences, the region was broken down into smaller areas for independent analysis. Five “regions” are discussed in this report: (1) the full 17-county DNR Central Region; (2) the 11-county Twin Cities metropolitan area; (3) the 7-county core of the metropolitan area; (4) the four “collar” counties adjacent to the 7-county core; and (5) the 6-county non-metropolitan area.

**Growth Patterns In DNR’s 17-County Central Region**

The 17-county study area is home to 3.2 million people, nearly two-thirds of the state’s population, and contains the state’s primary growth engine: the Twin Cities metropolitan area economy. The 11-county metropolitan area is projected to grow significantly by 2030, with the seven core metropolitan counties continuing to receive the majority of the state’s new residents and jobs.

Like most metropolitan areas in the U.S., the Twin Cities metropolitan area has seen significant decentralization of population and jobs during recent decades. This pattern has not been as pronounced as in many large metropolitan areas due at least, in part, to the existence of relatively strong (compared to other metropolitan areas) regional institutions like the Metropolitan Council and the Twin Cities Fiscal Disparities Program. 1

However, the region has been growing more rapidly than any other metropolitan area in the upper Midwest and current projections show the metropolitan area adding more than one million people in the first three decades of the 21st century.

The non-metropolitan portion of the 17-county region has grown much less rapidly than the Twin Cities metropolitan area. Like rural areas across the country, many parts of the 6-county non-metropolitan region have endured significant population declines.

The attraction of natural amenities, however, has drawn retirement and resort-driven growth to the 6-county non-metropolitan area, putting increasing pressures on sensitive natural areas. Continued income growth in the metropolitan area, and the increasing share of the retirement-aged population, will likely fuel continuing demand for land and housing in the non-metropolitan part of Central Region.
Population Growth

The 7-county metropolitan core: The metropolitan area's core is the most densely settled area in the state. In 1990, 86 percent of the population of the 17-county study area lived in the core counties and 78 percent of the growth in the 1990's occurred in this area.

While both of the core cities of Minneapolis and Saint Paul gained population overall between 1990 and 2000, the two cities grew at a substantially slower rate than the 7-county region as a whole—3.9 percent for Minneapolis and 5.4 percent for Saint Paul, compared with a 7-county growth rate of 15.4 percent.

The region's inner-ring suburbs also saw either very modest growth or decline. Growth was strongest in outer ring suburban communities, such as Woodbury and Lakeville, extending to the outer edges of the 7-county core area (Map 1).

More recent population estimates show strong, continuing growth at the perimeter of the 7-county area. According to estimates by the Metropolitan Council, the 7-county region grew by 30,045 people between 2003 and 2004 and almost all of this growth occurred in developing suburbs (25,241 new residents) and exurban areas (4,747 new residents). By 2003, the 10 cities adding the most population were all middle-ring and outer suburbs—Shakopee, Maple Grove, Blaine, Lakeville, Eden Prairie, Prior Lake, Plymouth, Farmington, Chaska and Woodbury. These 10 cities alone added a total of 54,303 new residents over the four-year time period.

Growth patterns can be seen very clearly in Maps 2 and 3, which show housing subdivisions built between 1998 and 2005 in the 11-county metropolitan area. Map 2 shows the location and size of individual developments and Map 3 sums the numbers of new housing units to the municipal level.

Collar and non-metropolitan counties: All of the metropolitan collar counties—Chisago, Isanti, Sherburne and Wright—grew very quickly during the 1990's. Although not as densely settled as the 7-county metropolitan core, these counties continue to grow. In 1990, the collar counties were home to just six percent of the population in the 11-county metropolitan area; during the 1990's they captured 15 percent of the entire region's growth. Most of Sherburne County, for instance, grew by more than three percent per year during the 10-year period.

Moving beyond the metropolitan area into the non-metropolitan area, rapid growth occurred in northern Mille Lacs County and northwestern Kanabec County. Mille Lacs County was unique in the study area in that all census tracts in that county experienced positive population growth in the 1990's.

Much of the rest of the 6-county non-metropolitan region experienced population losses, especially large portions of Todd, Morrison and Stearns counties. However, just northwest of the metropolitan area, St. Cloud acted as a locus of growth, with immediately adjacent tracts in Benton, Sherburne and Stearns counties showing relatively strong growth (Map 1).


Changes in population help to identify the communities that are burdened with the costs of rapid growth, and those that are struggling with the costs of decline. Minneapolis and St. Paul gained population overall between 1990 and 2000, but grew at a substantially slower rate than the metropolitan area as a whole. Throughout the region, growth was strongest in the metropolitan area's middle and outer suburbs, along Highway 169 from the core region north to Mille Lacs, and northwest along I-94 between the core and St. Cloud.
Recent growth patterns show continuing strong growth at the perimeter of the 7-county metropolitan area and into the adjacent collar counties. The Metropolitan Council estimated that in 2003 and 2004 the 7-county metropolitan area gained about 30,000 people and nearly all of the growth occurred in developing suburbs. These patterns are shown clearly in the location and size of individual developments in new housing subdivisions.
Between 2000 and 2004, the 10 cities adding the most population were all middle-ring and outer suburbs—Shakopee, Maple Grove, Blaine, Lakeville, Eden Prairie, Prior Lake, Plymouth, Farmington, Chaska and Woodbury. These 10 cities alone added a total of 54,303 residents during these four years. Again, this pattern appears clearly when looking at total number of lots in new subdivisions at the municipality level.
Urbanization

While the spatial pattern of population growth is an important way to track growth, it does not capture all of what is important in growth patterns. Remote sensing from satellite imagery and aerial photography provide a means for visualizing the direct effect of growth and development on the landscape.

Map 4 shows one major aspect of land use change—urbanization—in the 7-county core region over the period 1986 to 2002. Urbanization in this report is defined as land which is in the following uses—residential, commercial, industrial, transportation or communications. Based on satellite imagery analyzed by the Department of Forestry, University of Minnesota, the map shows how growth in population and employment consumed previously undeveloped land during the period.

Very rapid urbanization occurred in areas immediately adjacent to previously urbanized areas (in inner and middle suburbs) as well as in locations along major roads and highways. The data show a pattern seen in most American metropolitan areas—as it has grown, the metropolitan area has become less dense, consuming (or urbanizing) land at a rate greater than population has grown.

Between 1986 and 2002, the growth rate in urbanized land was 53 percent greater than the population growth rate.

Current population projections show the 7-county region growing by 33 percent between 2003 and 2030. If this growth urbanizes land at the same rate as the recent past then the amount of urbanized land in the 7-county region will grow by another 50 percent during that period, consuming hundreds of thousands of acres of previously undeveloped land.

Figure 1: Growth in Urbanized Land, Population, and Households
7-county Core Area: 1986-2002

Sources: Remote Sensing and Geospatial Analysis Laboratory, University of Minnesota, U.S. Census Bureau.
Urbanized land in the 7-county metro area grew by 53 percent more than population between 1986 and 2002. Urbanization—land used for residential, commercial, industrial, transportation or communication purposes—shows how population and employment growth consumed previously undeveloped land from 1986 to 2002 in the 7-county area. Very rapid urbanization occurred in areas immediately adjacent to already urbanized areas as well as along major roads and highways. There has also been a great deal of scattered, non-contiguous development in the outer areas of the 7-county region.
Jobs

Historically, jobs have tended to follow people to the suburbs. As areas became suburbanized, firms followed to be nearer their workforces and customers. In addition, many of the same factors that draw households to the suburbs directly affect businesses as well—such as cheaper land and improving access as a result of substantial transportation investments like roads and highways.

However, not only do jobs follow people, but people follow jobs. The spread of significant numbers of jobs to middle and outer suburbs enables many workers to live further and further from the core of the region while still remaining within reasonable commutes from their jobs. In addition, for a select group of workers, technological advances in communications, such as the internet and wireless communications, have made telecommuting possible.

All of these factors have made living at the edges of the metropolitan area much more practical. In many cases these are areas that still retain natural habitats with significant ecological value and little of the physical infrastructure (such sewers and waste water treatment facilities) needed to support low-impact development.

A trend toward decentralization is clearly evident in the job and job change data for the 17-county region. Like population, jobs still tend to cluster in the core of the metropolitan area and in a few towns in the non-metropolitan portion of the study area, most notably St. Cloud (Map 5).

Job growth in the 7-county metropolitan area, however, has been significantly greater in middle and outer suburbs (Map 6). Growth was negative or below the regional average in the core of the metropolitan area, including both central cities of Minneapolis and Saint Paul and most of the older, inner-ring suburbs. High percentage gains in jobs between 1993 and 2003 were concentrated in growing suburban communities just inside or at the boundaries of the 7-county metropolitan area where much of the urbanization in recent years occurred.

Beyond the 7-county metropolitan area, job densities tend to be much lower. Many of these largely rural areas show significant job growth but it is from such small numbers that it represents relatively few jobs in absolute numbers. Between 1993 and 2003, 90 percent of the job growth in the 17-county area occurred in the 11-county metropolitan area and most of that was in the core seven counties.

The jobs data reinforce the conclusions from prior sections. The metropolitan area is the primary locus of growth in the 17-county region and the fastest growing areas are in its middle and outer suburbs, especially on the outskirts of the 7-county core region.
The metropolitan area's largest job centers are in the core of the region and provide above the regional average of 141 jobs per 100 households. However, inner and middle suburbs, especially along I-494 in the south and west, are now commuting centers as well. Several suburbs, including Edina, Bloomington, Eden Prairie, Minnetonka and Golden Valley actually have more jobs per resident household than the central cities. The spread of jobs to the suburbs allows workers to live further away from the regional core while still maintaining a reasonable commute to their jobs. In the non-metropolitan portion of the Central Region, jobs still tend to cluster in traditional job centers like St. Cloud, Sauk Centre, Long Prairie and Milaca.
Job growth has been significantly greater in the middle and outer suburbs of the 11-county metropolitan area than in the 7-county core. Job growth in Minneapolis and St. Paul, as well as in the older inner-ring suburbs, was negative or below the regional average. Outside the core metropolitan area, many areas show significant job growth, but it is from small bases and represents relatively few jobs in absolute numbers.
The Increasing Reach of the Twin Cities Metropolitan Area

The prior sections show very clearly the importance of the 11-county metropolitan area in any discussion of growth pressures in central Minnesota. The metropolitan economy is the strongest growth engine in the larger region. Given that the dominant trends in the metropolitan economy involve the decentralization of jobs and people, this suggests that the influence of the core metropolitan area is spreading further out into the region.

The places where this can be seen most clearly are in the four collar counties of Chisago, Isanti, Sherburne and Wright that are adjacent to the core region. These counties, which were not added to the Census-designated “metropolitan area” in the 1970’s and 1980’s, are the fastest growing counties outside of the 7-county core and this growth is clearly being driven by the metropolitan economy.

Table 1 shows one measure—increases in the number of workers commuting from residences in the collar counties to jobs in the 7-county core—of how much more connected to the core metropolitan area the collar counties have become. The total number of workers residing in these four counties almost quadrupled between 1970 and 2000, from about 31,500 to 118,225. However, during the same time period, the number of workers living in the collar counties and working in the core seven counties increased by more than six times, from just 8,900 to more than 56,000. By 2000, 48 percent of the workers living in these counties commuted to jobs in the 7-county core, compared to just 28 percent in 1970.

How did this kind of change occur? Transportation improvements made a significant contribution, but another important factor was the growth of jobs in the middle and outer sections of the core seven counties. Map 6 shows this job growth in one way. Another way to see this expanding reach is by examining commuting data into job centers in Twin Cities suburbs.

Map 7 shows the distribution of job centers, which were derived using data describing commuting patterns in the metropolitan area in 1990 and 2000. Job centers were defined as areas with jobs per square mile higher than the regional average and with more than 2,500 jobs in 2000. Large clusters like those in the centers of Minneapolis and St. Paul were divided into more than one center by examining the job densities and the types of jobs.

The data indicate that there are 40 significant job clusters located near major transportation arteries within the core region. This group of job centers has remained fairly stable for a number of years. The same job clusters result if the analysis is performed on 1990 data.

Table 2 shows job and job growth data for the job centers grouped by their locations in the metropolitan core area. The groups include the central business districts, other job centers within the two central cities, inner suburban job centers, middle suburban job centers, and outer suburban job centers. Also shown are the totals for all non-clustered jobs, or jobs not in a job center.

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**Table 1: Integration of the Collar Counties into the Twin Cities Metropolitan Area, 1970 — 2000**

<table>
<thead>
<tr>
<th>County</th>
<th>Total Resident Workers</th>
<th>Resident Workers Commuting to the Core 7 Counties</th>
<th>Percentage of Resident Workers Commuting to the Core 7 Counties</th>
<th>Percentage of Resident Workers Commuting in County of Residence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chisago</td>
<td>5,597</td>
<td>20,772</td>
<td>250</td>
<td>1,732</td>
</tr>
<tr>
<td>Isanti</td>
<td>5,597</td>
<td>16,085</td>
<td>187</td>
<td>1,611</td>
</tr>
<tr>
<td>Sherburne</td>
<td>6,037</td>
<td>34,084</td>
<td>465</td>
<td>1,643</td>
</tr>
<tr>
<td>Wright</td>
<td>13,921</td>
<td>47,284</td>
<td>240</td>
<td>3,945</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31,490</strong></td>
<td><strong>118,225</strong></td>
<td><strong>275</strong></td>
<td><strong>8,931</strong></td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of the Census.
The job center data show a pattern consistent with the decentralization evident in prior sections. Large numbers of job centers and jobs are now in the suburbs, including the vast majority of the non-clustered jobs. Job growth rates increase, on average, with distance from the core. In addition, the number of jobs not in job clusters increased much more rapidly than those in job centers—so not only are jobs decentralizing but they are also becoming less concentrated.

The rapid growth in job centers on the fringes of the 7-county metropolitan area and in non-clustered jobs opens up opportunities for individuals to live in parts of the region well beyond the current urbanized area. While it might not be practical for someone living in western Wright County to commute to the Minneapolis central business district, it might be very practical for that same person to commute to Maple Grove. Growth of job centers at the fringes of the core region allows individuals previously residing within the urbanized area to take advantage of cheaper land and housing outside of the metropolitan core without giving up employment opportunities.

Commuting data for 1990 and 2000 show how accessible residences on the fringes have become. Maps 8 and 9 show a representative suburban job center—the Fridley/Coon Rapids center—and various commute times to that job center in 1990 and 2000 (i.e., 0-20 minutes, 20-30 minutes, and 30-40 minutes). These commuter-sheds were derived using data about where commuters to the job center live and how long their commutes take. The Fridley/Coon Rapids job center had 14,500 jobs in 1990 and grew by 45 percent, to 21,000 jobs in 2000. Map 8 shows that, in 1990, workers in this job center could live relatively far out at the edges of the metropolitan area and still have reasonable commuting times to their jobs. At that time, much of Isanti and Sherburne counties, and significant parts of Chisago and Wright counties, were within a 40 minute commute of the Fridley/Coon Rapids job center.

However, rapid population and job growth in this part of the region during the 1990's led to increasing traffic congestion, making these commutes more and more difficult. By 2000, although the commuter-shed still reached into Chisago, Isanti and Sherburne counties, the area within a 40 minute drive of the job center had shrunk considerably (Map 9). Increasing congestion in the periphery of the region could have different effects. On one hand, slower commutes make the farthest locations less desirable to potential residents/commuters. On the other hand, firms locating or relocating to this part of the region have incentives to move even further away from the core to remain within a “reasonable” distance of the area’s growing number of workers and customers.

Overall, it is clear that the collar counties are rapidly transforming from largely self-contained rural environments to more suburban communities with strong links to the metropolitan economy. As long as that economy continues to grow, this part of the region can expect to see growing demand drive development of currently undeveloped land, including sensitive natural areas.

<table>
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<tbody>
<tr>
<td>Central Business District</td>
<td>2</td>
<td>168,673</td>
<td>179,070</td>
<td>6</td>
<td>58,847</td>
<td>13</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Other Central City</td>
<td>8</td>
<td>197,409</td>
<td>206,060</td>
<td>4</td>
<td>7,497</td>
<td>15</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Inner Suburb</td>
<td>10</td>
<td>163,622</td>
<td>194,565</td>
<td>19</td>
<td>6,596</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Middle Suburb</td>
<td>13</td>
<td>176,100</td>
<td>214,275</td>
<td>22</td>
<td>4,626</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Outer Suburb</td>
<td>7</td>
<td>37,419</td>
<td>51,105</td>
<td>37</td>
<td>2,452</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Total – Employment Ctrs.</td>
<td>40</td>
<td>743,223</td>
<td>845,075</td>
<td>14</td>
<td>7,958</td>
<td>55</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td>Non-clustered Employment</td>
<td>596,045</td>
<td>783,405</td>
<td>31</td>
<td>7,958</td>
<td>45</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Total – Metropolitan Area</td>
<td>1,339,268</td>
<td>1,628,480</td>
<td>22</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Central Business Districts: Minneapolis CBD and St. Paul CBD
Other Central City: Highland, Minneapolis - North, Minneapolis - Northeast, Minneapolis - Phillips/Whittier, Minneapolis - University of MN, St. Anthony, St. Paul - Midway, St. Paul Center
Inner Suburb Job Centers: Airport/Fort Snelling, Brooklyn Center, Edina, Golden Valley - I-394, Maplewood - 3M, Maplewood - I-694, Richfield-Crosstown, Robbinsdale, Roseville, St. Louis Park
Outer Suburb Job Centers: Anoka, Burnsville-Hwy 13,Burnsville Center, Maple Grove, Shakopee, Stillwater-Hwy 36, Wayzata

Table 2: Job Growth by Type of Employment Center Percentage

Source: U.S. Census Transportation Planning Package
Job centers are defined as areas with job densities greater than the regional average and more than 2,500 jobs in 2000. The job centers are scattered across the seven-county core of the metropolitan area near major transportation arteries. The data show a pattern consistent with the overall decentralization of the region – large numbers of job centers are now in the suburbs.
Growth of job centers in the suburbs allows individuals previously residing within the urbanized area to take advantage of cheaper land and housing outside of the metropolitan core without giving up employment opportunities. In 1990, workers in the Fridley-Coon Rapids job center could live relatively far out and still have a reasonable commute. However, rapid population and job growth in this part of the region led to increasing traffic congestion, making these commutes more and more difficult.
Growth in the 6-County Non-metropolitan Area

The power of the metropolitan economy and job decentralization have driven population shifts in much of DNR’s Central Region, but other factors have also been at work, particularly outside the metropolitan area. The 6-county non-metropolitan part of the study area is beyond the reach of the metropolitan labor market for the most part. Although growth was very modest, on average, in this part of the region, there were pockets of significant growth during the 1990’s.

The highest growth rates occurred in the Highway 169 corridor through Mille Lacs County, across much of Kanabec County and in parts of Todd County (Map 1). The most likely impetus for past growth in these areas was natural amenities. Comparing the distributions of seasonal housing (a proxy for amenity-driven resort or cabin development) and population growth illustrates this relationship.

In 2000, there were two major clusters of seasonal housing in the 6-county region: from southern Todd County stretching northeast to the Camp Ripley area in Morrison County; and in northern Kanabec and Mille Lacs counties and northeastern Morrison County around the southern end of Lake Mille Lac (Map 10). The areas showing the strongest population growth during the 1990’s (Map 1) are nearly identical.

Demand for year-round housing from increasing numbers of retirees moving to the area also contributes to growth in the 6-county non-metropolitan part of Central Region. Throughout Minnesota, seasonal properties are commonly converted to year round residences by retiring owners. Where this process has just begun, you would expect to see high, but declining seasonal housing rates. High initial seasonal housing rates reflect the resort and cabin economy and declining rates reflect new year-round housing and conversions from seasonal to year-round housing.

Maps 10 and 11 show precisely this pattern in the fastest growing parts of the 6-county, non-metropolitan area. The fastest growing areas with high seasonal housing rates highlighted above—near Lake Mille Lacs and in the Camp Ripley area—also show declining seasonal housing rates. The seasonal housing declines were the result of both increases in the overall number of housing units (from growth) and decreases in the number of seasonal units (from replacement or conversions to year-round units). This pattern is likely to intensity as more and more baby-boomers retire.
The distribution of seasonal housing is used as a proxy for resort or cabin development. High percentages of seasonal housing near Lake Mille Lacs and in Todd and Morrison counties correspond with areas showing the highest population growth rates in the 6-county non-metropolitan portion of Central Region.
As job decentralization in the metropolitan area makes the non-metropolitan area more viable for residential development, higher rates of standard residential development and conversion of seasonal housing to year-round can be expected. The first signs of this transformation occurred in the 1990s, when the share of seasonal housing declined in much of the 6-county non-metropolitan area. These declines were due to both overall increases in the number of housing units and decreases in the number of seasonal units.
Projected Future Growth in DNR’s 17-County Central Region

Past population and job growth trends can help us to understand the forces at work in defining the demographic and economic face of a region. However, past patterns do not always foretell the future, so it is worthwhile to examine projections that account for a variety of factors. Population projections are available for the entire Central Region. Such projections are subject to error, of course, but they provide the best available basis for evaluating future pressures on sensitive resources.

Map 12 shows projected population growth to 2030 as estimated by the Office of the Minnesota State Demographer and the Twin Cities Metropolitan Council. The 17-county study area is projected to add 1,073,532 residents between 2003 and 2030. The vast majority of this growth—93 percent or about 1 million people—is expected to fall in the 11-county metropolitan area. Roughly 900,000 new residents are expected within the 7-county metropolitan core alone.

The greatest projected growth rates in the 7-county metro area are found in the second and third ring suburbs (Map 12). These high growth areas lie almost uniformly adjacent to land that made up the urbanized core of the region in 2002 (Map 3), implying that a large share of future growth will most likely consume currently undeveloped land.

Overall, growth within the seven-county metro area is expected to be strongest in the western half, with nearly all remaining non-urbanized areas of Hennepin, Carver, and Scott Counties seeing high population growth rates.

Many of the municipalities in the four collar counties show similarly high projected growth rates. The highest rates occur in western Chisago County, all but the western most tip of Sherburne County, and extreme northeastern Wright County. Notably, the growth in the collar counties falls almost exclusively in areas directly adjacent to or one municipality removed from major transportation corridors: Interstate 94 (and U.S. Highway 10) through Sherburne and northeastern Wright Counties, U.S. Highway 169 through eastern Sherburne County, and Interstate 35 through western Chisago County.

Although this growth is from relatively small numbers compared to the high-growth areas of the 7-county core metro, the 100,000 people expected to settle in these areas represent very significant growth—46 percent for the four counties as a whole. Further, since much of the land in these counties is currently non-urban, this growth is also likely to represent significant consumption of currently undeveloped land.

Significant growth rates are also predicted for parts of the 6-county non-metropolitan portion of the study area. Much of this growth is expected in the same areas highlighted in the discussion of non-metropolitan growth in the 1990’s. The Highway 169 corridor through Mille Lacs County shows the greatest projected growth, illustrating again the power of major infrastructure investments to shape growth.

In general, if the rate of land consumed continues to outstrip the rate of population growth in the metropolitan area, as it has in the past, the growth projections shown in Map 12 are almost certain to result in the loss of sensitive natural areas, valuable agricultural land, and other types of open spaces. To document these threats, the next section examines the location of sensitive natural areas in the 17-county region and the variation in water sources to meet water demands from growth.
Population projections are subject to error but they provide the best available basis for evaluating future pressures on sensitive resources. The greatest growth rates in the 7-county metropolitan area are expected in the second and third ring suburbs. In the region, projected growth follows the major transportation corridors, especially I-94, I-35, and Highway 169.
**Sensitive Natural Areas in DNR’s Central Region (2005)**

DNR’s Central Region lies at the nexus of coniferous and deciduous forests and grasslands, and abounds with wetlands, rivers, streams, and lakes. Bifurcating Central Region from northwest to southeast is the mighty Mississippi River and its outwash plains, hills, and moraines left from the last glaciation. The region’s glaciated past created a wide variety of different landforms throughout the region and an abundance of different plant and animal communities. DNR’s Central Region includes 9 different ecological subsections: the Mille Lacs Uplands, the Pine Moraines and Outwash Plains, the Anoka Sand Plain, the Hardwood Hills, Big Woods, Oak Savanna, St. Paul Baldwin Plains and Moraines, the St. Croix Moraine, and the Blufflands.

Regional growth and development since European settlement have converted over 60 percent of the region’s 6.5 million total acres to other types of land uses. In 2005, roughly 40 percent of the region, or about 2.7 million acres, can be characterized as sensitive natural areas. These remaining acres of sensitive aquatic and terrestrial resources, as defined by the data sets used in the mapping (see text box), are allocated almost equally between the 11-county metro area (1.3 million acres) and the 6-county non-metropolitan area (1.4 million acres). With the exception of the four natural resource clusters discussed below, remaining resources exist in the regional landscape as smaller, isolated habitat fragments that are readily affected by a wide variety of incompatible, adjacent land uses.

The Sensitive Natural Areas map for Central Region (Map 13) shows three categories of sensitive natural resources that were compiled using existing natural resource data sets of varying ages. Because some of the existing data sets are less accurate than others due to the rate of development in the region, this GIS map undoubtedly overestimates the presence of remaining sensitive natural areas. It is, however, a useful, region-wide compilation of existing data and provides guidance at the regional scale to help focus efforts on land and water conservation in fast growth areas of the region.

Habitats with the highest sensitivity to external pressures (based on Minnesota County Biological Survey data and Regionally Significant Ecological Areas, modeling by the DNR) shown in dark blue on Map 13, constitute an estimated 36 percent of the Region’s remaining sensitive natural areas. These high quality habitat areas are the remnants of the region’s former glorious natural heritage and deserve protection for future generations. Lower quality habitats, that still provide many important benefits, make up the remaining 64 percent of the region’s sensitive natural resource base. In the “land of 10,000 lakes”, it is not surprising that Sensitive Aquatic Areas, like lakes, trout streams, floodplains, and permanent wetland types, make up 22 percent of remaining sensitive areas. Sensitive Land Areas, including upland buffer zones directly adjacent to many types of sensitive water resources, steep slopes, and ephemeral wetlands, make up an estimated 42 percent of all remaining sensitive natural areas in Central Region.
Relative to other growing metropolitan regions, Central Region still retains a fair percentage of important natural habitats that provide many unseen and unacknowledged environmental, economic, and social benefits. Unfortunately, these natural habitats do attract development, which often creates detrimental external pressures such as removal of native vegetation, restrictions on natural processes like fire, or the introduction of exotic species. Only 14 percent, or about 400,000 acres (see hatched areas of Map 13), of the Region’s sensitive natural areas are publicly managed by federal, state, or regional government. This means that roughly 6 percent of the total surface area of Central Region is currently available to future generations.

While sensitive resources are scattered throughout the 17-county region, DNR’s mapping suggests that there are four major clusters of sensitive natural areas when measured as a percentage of a municipality’s total area (Map 14). In the northern portion of DNR’s Central Region lies Minnesota’s second largest lake, Mille Lacs, at over 132,000 acres. Despite a long history of resort and seasonal housing development near this famous walleye fishery, this portion of the Mille Lacs Uplands area of the region still retains high quality natural resources, especially wetlands and deciduous forest patches. Whereas Mille Lacs Kathio State Park, Mille Lacs Wildlife Management Area, and the Rum River State Forest offer public protection to some of the sensitive resources in this area, there remain sensitive areas that are not in public ownership. This part of the region has seen significant population growth since 1990 (Map 1), and is projected to experience substantial growth in the next 25 years (Map 12). Unprotected sensitive natural resource areas appear to be in the path of future growth and development, largely in the form of resort development and housing development for retirement.

A second cluster of sensitive natural areas is found in the northwestern portion of the 17-county region. Located in the Hardwood Hills ecoregion, just to the west of the Mississippi River valley, Todd and Morrison counties are characterized by sandy outwash plains, river bluffs, hardwood forests, and numerous small wetlands. Although much of this portion of the Hardwood Hills ecoregion is cultivated or in pasture, Camp Ripley is located within this resource cluster. At 53,000 acres, Camp Ripley is, according to DNR’s Minnesota County Biological Survey, one of the most important wooded habitats in Central Minnesota. Over 200 bird species, 50 mammal species, 40 fish species, 24 amphibian and reptile species, and 8 mussel species are found within its borders. Growth has been increasing around Camp Ripley, especially in the townships of Turtle Creek, Cushing, Scandia Valley, and Rosing and positive growth is anticipated through 2030. Residential development threatens the area’s uplands and very sensitive water bodies because of their poor buffering capacity and unique hydrological characteristics. Current partnership efforts to buffer Camp Ripley beyond its current borders through the purchase of conservation easements from willing sellers have the potential to protect additional sensitive resources in this part of the Region.

Moving south into the Anoka Sand Plain subsection of DNR’s Central Region, the map shows a broad stretch of sensitive natural areas that extends from the Mississippi River in central Sherburne County eastward to Anoka County, southern Isanti County, southwestern Chisago County, and northern Washington County. This entire area is part of a 3,000 square mile fine sand glacial outwash plain characterized by shallow lakes, wetland depressions, rare dune habitats, oak savanna, and dry prairie. Within this cluster are multiple large protected areas: the 31,000 acre Sherburne National Wildlife Refuge, the surrounding Sand Dunes State Forest, the Uncas Dunes Scientific and Natural Area, and the 23,000 acre Carlos Avery Wildlife Management Area located in Anoka and Chisago counties. Despite the fact that much of the sand plain is not easily developed because of the abundance of wetlands, growth is occurring rapidly in this area. In Anoka County alone, urbanized area increased 81 percent from 1986 (53,000 acres) to 2002 (96,000 acres). Significant population growth is projected for all of Sherburne County and areas adjacent to Interstate 35 that transects north-south through the Anoka Sand Plain.
The fourth, less obvious cluster of sensitive natural areas is located in the vicinity of the 14,000-acre Lake Minnetonka and includes portions of Hennepin, Carver and Scott counties. As the ninth largest lake in the state (excluding border lakes), Lake Minnetonka was once the location of summer cottages for wealthy Minnesotans. Today, ringed by year-round homes, the watershed is largely urbanized. With the lake as a major recreational amenity, much of this development is high-end residential. Significant population growth is expected in nearby municipalities such as Minnetrista and Laketown townships, in part, due to the natural amenities of the area’s smaller lakes, wetlands and wooded areas. This implies more fragmentation and conversion of existing sensitive natural areas that have made this portion of the region so attractive.

It is important not to dismiss portions of the region where sensitive natural areas are small, scattered, and isolated. The data underlying Map 13 show that there are nearly 500,000 acres of unprotected sensitive areas remaining in the densely populated 7-county metropolitan region and an ecological assessment, concluded in 2003 by the DNR in partnership with the Metropolitan Council, indicated that there are approximately 120,000 acres of high quality wetland and terrestrial habitats in the core region alone. ⁹

As shown in Map 14 sensitive resources remaining in the 7-county core are primarily located at the fringe of the region, with many townships showing 25-50 percent of their total area covered with fragments of sensitive natural areas.