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Detroit Metropatterns

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Detroit Metropatterns

A Regional Agenda for
Community and Prosperity in Detroit

Myron Orfield
Thomas Luce
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Introduction and Overview

Analysis of demographic and fiscal trends in the Detroit region shows how uncoordinated, inefficient development and competition for tax base are threatening every community in the region—from the most impoverished to the most affluent.

- Job growth in the region has trailed the nation and other comparable metropolitan areas for the past decade.
- The region continues to consume previously undeveloped land despite the fact that its population is barely growing.
- The ability of local areas to finance local public services varies dramatically from place to place.
- The region shows some of the highest rates of segregation by race and income in the nation.

A variety of factors are responsible for these trends. Some, like major declines nationally in manufacturing sectors that were once the core of the region’s economy, are largely beyond the scope of local policies. Others, like the fragmented nature of local governance in the region, are rooted in longstanding tradition. However, other metropolitan areas facing similar problems have fared better. In particular, metropolitan areas that have developed institutions to reduce incentives for inefficient inter-local competition for economic activity and to coordinate land use and economic development planning on a regional scale have consistently out-performed Detroit.

Here are the report’s main findings:

The idea that the suburbs are free of fiscal and social stresses is a myth. Over half of suburban residents in the 10-county study area live in communities that are struggling with social or fiscal stress. One group of suburbs has problems typically associated with large cities, including weak tax bases and significant and growing poverty in schools. Another group of shows lower poverty than the stressed suburbs but has weak tax bases, slow growth and growing social needs. Despite the fact that the region as a whole is growing very slowly, a group of middle and outlying suburbs is facing growth-related costs with modest, largely residential tax bases. Just a small share of the population lives in affluent suburbs with expensive housing, plentiful commercial development and strong tax bases.

The region’s communities are highly divided by income, race and fiscal conditions. Most of the region’s growth and the opportunities that accompany growth are occurring in outlying areas. Even though overall regional population has been stagnant, households and economic activity in the region continue to move outward, consuming previously undeveloped land. Municipalities further from the core tend to have lower poverty rates and higher property tax bases. Not all populations are moving outward at an equal rate, though. People of color are disproportionately located in declining central cities and inner suburbs, which are losing population, tax base and income to outlying communities. These social and fiscal inequities are greater than they need to be.

All types of communities are hurt by the way the region is growing. The region is increasingly segregated by income and race. Central cities remain troubled, and a growing
A group of suburbs is experiencing similar social strains. Despite little or no population growth, the region continues to sprawl outwards, leading to losses of farmland and natural habitat. Growing traffic congestion is threatening the quality of life for many residents.

Michigan’s state and local finance system pits local governments against one another in a competition for tax base. Without changes to the development policies shaping the state, there is no reason to believe these patterns will not continue, with a core of stressed communities growing larger, and a ring of sprawl devouring even more land around it.

*All types of places would benefit from regional reforms.* Regional cooperation offers the best hope for strengthening communities, preserving the environment and increasing quality of life for all citizens:

- **Tax reform** can stabilize fiscally stressed communities, help communities pay for needed public services and reduce incentives for inefficient inter-local competition contributing to the current pattern of development.

- **Cooperative land-use planning** can help communities coordinate development, revitalize stressed neighborhoods and conserve open space.

- **Metropolitan governance** can help address issues that cross municipal boundaries and ensure that all communities have a voice in regional decision-making.

**Change is possible.** Cooperative strategies like these offer a viable path for the Detroit region to meet its challenges. They are already in place in various forms throughout the country, and have thoughtful advocates in the 10-county area. They can encourage environmentally sensitive development, reduce inequalities among communities, encourage regional economic development efforts and expand the opportunities of the state’s most vulnerable residents.
Detroit Metropatterns

The Detroit area—defined in this report as Genesee, Lapeer, Lenawee, Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties—is struggling with problems associated with slow and unbalanced growth. Job growth lags behind the nation and other similar metropolitan areas; the region is sprawling despite the fact that population has grown only 3 percent since 1970; poverty and its consequences are distributed very unevenly across the region; and significant differences in the ability of local governments to pay for services make it difficult for many local governments in the region to meet public service needs.

Many parts of the region face relatively high social costs, associated with high or increasing poverty, or with low, declining or stagnant resources. At the same time, local areas engage in inefficient competition with each other to try to control as large a slice as possible of the region’s tax base pie, rather than working together to increase the size of the total regional pie.

This work describes these trends and highlights the policy alternatives available to counteract the negative and enhance the positive in the way the region is growing. The work begins by documenting the types of places found in the 10 counties of the study area. This is followed by analysis of how the region has grown in recent years and the social, economic, environmental, and fiscal impacts of growth patterns on both local governments and the region as a whole. The report concludes with a description of the policy alternatives available to promote orderly and economic development across the region.

Community Classifications

The fiscal health of local areas is determined by a variety of factors affecting both their ability to raise revenues and the costs associated with their social and physical needs. In order to account for a range of factors, this report relied on a statistical technique called cluster analysis to identify groups of communities sharing fiscal, social and physical characteristics. (See page 8 for a description of the clustering procedure).

The results show that, like virtually all metropolitan areas in the U.S., the Detroit region cannot be simply divided into two parts—central cities and suburbs. In fact, the clustering process revealed 7 types of suburban communities in the region, each with its own strengths and challenges. (See Map 1 for the communities included in each group and Table 1 for a summary of the characteristics of the community types.)

Central cities: The region’s two central cities boast attributes—downtowns, attractive older homes and central locations—that provide clear opportunities for revitalization. But despite these strengths, they remain severely stressed overall, with high and growing poverty, severe racial segregation, aging infrastructure, and lower than average jobs per resident—an unusual characteristic for central cities. Home to 17 percent of the households in the region, Detroit and Flint must provide for great social needs, straining their tax bases, discouraging investment, and dramatically limiting the opportunities of residents.

Stressed suburbs: The region’s most stressed suburbs are mostly fully-developed, high-density inner suburbs, but also include several older areas further from the core. These 38 cities and townships represent 10 percent of regional households—12 percent of suburban households. As a group, they
have very low property tax bases, very high rates of poverty, slow population growth or declining population, aging housing stocks and infrastructure, and few jobs per household.

**At-risk developed areas:** Home to 26 percent of suburban households, these suburbs are mostly inner suburbs close to Detroit. They also include some outlying residential areas near the fringes of the region, particularly in the southwest. On average, these communities have slightly higher than average jobs per household and average poverty; however, they also have below-average property tax bases that are growing more slowly than average, higher poverty than other suburbs, very slow growth, and older than average housing stocks.

Some at-risk areas are already showing signs of stress, like increasing poverty in schools or low tax bases. Others are still outwardly healthy, with little poverty in their schools and relatively high average household incomes. But they too exhibit signs, like slow-growing tax bases, that foreshadow future problems.

**At-risk developing areas:** Home to 22 percent of suburban households, these areas are low-density, middle-class communities experiencing moderate growth. As developing suburbs, they have significantly younger housing stocks than developed areas, and are developed at much lower densities, which raises infrastructure costs. On average, at-risk developing areas have nearly as many jobs as households; however, this statistic masks a wide range in the number of jobs among communities. Many have few jobs and must finance the costs of growth with very small commercial-industrial tax bases.

**Bedroom developing areas** are the fastest growing areas in the region, but they represent only 9 percent of suburban households. They have moderate tax bases, few jobs, relatively low poverty and are growing rapidly. While their tax bases exceed those of at-risk areas, they remain below the regional average. At the same time, they grew one-and-a-half times as fast as the regional average from 1995 to 2005. Over time the costs of growth—new schools, roads, parks and police—can exceed the modest fiscal resources available in these areas.

**Suburban job centers** have 18 percent of suburban households. These areas have relatively high and growing tax bases and moderate population growth. They are home to a large share of the region’s commercial activity. As a result, their property tax bases per household are one-third higher than the regional average. These factors help them provide high quality public services at low tax rates. Suburban job centers are mostly middle-ring suburbs with good freeway access.

**Affluent residential areas** are residential suburbs with very high tax bases—nearly twice the regional average. They represent 13 percent of suburban households. Because they are mostly outer-ring suburbs, they have the youngest housing stock of all community types. They have experienced higher growth than the regional average, but they are not growing at the same rapid clip as bedroom developing areas.

All types of communities are hurt by the way the region is growing. Central cities and stressed suburbs must provide public services in high-cost, high-need environments with limited tax bases. At-risk areas also must cope with limited, largely residential tax bases while facing the costs associated with
either population decline (in fully-developed inner suburbs) or population growth (in developing outer areas). Low-density bedroom suburbs must cope with very rapid growth with modest, largely residential tax bases. Even high tax capacity suburban job centers face extra costs associated with the way the region is growing, including congestion and extra costs associated with non-resident in-commuters.

Map 1
Table 1: Summary of Community Types

<table>
<thead>
<tr>
<th>Community Type</th>
<th>Number</th>
<th>2005 Percent of Regional Households</th>
<th>2005 Property Tax Base per Household</th>
<th>2002 Jobs per Resident Household</th>
<th>2005 Households per Sq. Mile</th>
<th>2000 Median Housing Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central City</td>
<td>2</td>
<td>17</td>
<td>$31,908</td>
<td>0.9</td>
<td>2084</td>
<td>50</td>
</tr>
<tr>
<td>Stressed</td>
<td>38</td>
<td>10</td>
<td>$51,738</td>
<td>0.7</td>
<td>1328</td>
<td>47</td>
</tr>
<tr>
<td>At-Risk, Developed</td>
<td>60</td>
<td>21</td>
<td>$73,690</td>
<td>1.1</td>
<td>1058</td>
<td>46</td>
</tr>
<tr>
<td>At-Risk, Developing</td>
<td>121</td>
<td>18</td>
<td>$84,866</td>
<td>0.9</td>
<td>115</td>
<td>27</td>
</tr>
<tr>
<td>Bedroom Developing</td>
<td>39</td>
<td>7</td>
<td>$103,271</td>
<td>0.5</td>
<td>135</td>
<td>24</td>
</tr>
<tr>
<td>Suburban Job Centers</td>
<td>27</td>
<td>15</td>
<td>$116,810</td>
<td>2.0</td>
<td>954</td>
<td>26</td>
</tr>
<tr>
<td>Affluent Residential</td>
<td>35</td>
<td>11</td>
<td>$151,865</td>
<td>0.7</td>
<td>264</td>
<td>23</td>
</tr>
<tr>
<td>Region</td>
<td>322</td>
<td>100</td>
<td>$87,452</td>
<td>0.9</td>
<td>327</td>
<td>29</td>
</tr>
</tbody>
</table>

All values are medians

Figure 1

![Property Tax Base per Household](chart1.png)

![Poverty Rate by Community Type](chart2.png)
COMMUNITY CLASSIFICATION: HOW IT WORKS

This study relies on a statistical procedure called cluster analysis to assign municipalities to groups that are as internally homogeneous and as distinct from one another as possible, based on specified social, fiscal and physical characteristics.\(^1\)

The characteristics used to cluster Detroit-area communities were:

- 2005 property tax base per household
- 2002 jobs per resident household
- 1995-2005 growth in households
- 2000 median age of housing stock
- 2005 households per square mile

These variables provide a snapshot of a community in two dimensions—its ability to raise revenues from its local tax base and the costs associated with its social and physical needs. Fiscal capabilities are measured by property tax base. Ideally, income tax base would also be included but this measure is available for only the municipalities where the tax is used. However, property tax base per household correlates with payroll tax base per household, implying that it is a relatively good proxy for overall tax base. The jobs per household measure also serves as a good proxy for the payroll tax, as well as serving as a good measure of demand for local services from non-residents.

“Need” measures were selected to capture a range of local characteristics that affect costs. The poverty rate is a proxy for several factors that can affect public service costs. Low incomes are associated with greater need for services and increased costs of reaching a given level of service. Density is another important predictor of cost. Very low densities can increase per-person costs for public services involving transportation—schools, police and fire protection—and for infrastructure—roads and sewers. Moderate to high densities, on the other hand, can help limit these costs.

Similarly, population declines and large population increases tend to increase the per-person costs of long-lived assets like sewers, streets or buildings. When population declines the costs of these assets must be spread across fewer taxpayers. When population is growing rapidly, the costs of new infrastructure tend to fall disproportionately on current residents (compared to future residents) because of the difficulty of spreading the costs over the full lifetime of the assets. Finally, median age of the housing stock is a commonly used proxy for the age of infrastructure—older infrastructure is more expensive to maintain.

Because of their unique characteristics and internal heterogeneity, the central cities were placed in their own group before clustering.
Social Separation and Sprawl

The wide diversity of community types in Detroit reflects the fact that its communities are highly, and increasingly, divided by income, race and fiscal condition.

This segregation occurs for many reasons, but in part because local governments in the region are highly dependent on locally generated tax revenues to pay for public services—everything from schools and parks to police and fire. That reliance has led to a fierce competition for developments that generate more in taxes than they cost in services. That usually means trying to attract big commercial projects and high-end housing, while limiting the land available for other needed land uses like affordable housing. But in the end, only a few places “win” this race.

Among the results of wasteful competition is great variation in tax base among communities, and great inequalities in the level of services they can provide. While tax-base rich communities can provide high-quality services at reasonable tax rates, fast-growing places with low tax bases often struggle to keep up with the onslaught of new residents and the schools, roads and sewers they require.

Older at-risk communities, burdened with stagnant tax bases, must cut services or raise taxes to provide the level of service desired by residents. Either choice puts them at a disadvantage in the regional competition for jobs and residents.

Despite some revitalization successes in Detroit, the overwhelming movement of opportunity in the region is outward. Gains in population, tax base, household income and jobs are occurring in outlying communities, at the expense of the core.

For example, Wayne County lost 3 percent of its population and 8 percent of its jobs between 1991 and 2006. At the same time, Livingston County’s population and employment both grew by more than 54 percent.

Sprawling development contributes to a devastating pattern of social stratification that is dividing the region by income and race. Communities in the region are highly segregated, with poor people of color disproportionately located in the cities of Detroit and Flint and a growing group of distressed suburbs—places with low and slow-growing tax bases.

These pressures help drive the outward growth of the region. Between 1970 and 2000, despite the fact that population in the region grew by only 3 percent, the amount of developed land increased nearly 75 percent. (Map 2) This seemingly anomalous combination is the result of large population declines in the core of the region coupled with growth on the fringes (Map 3), a pattern which is expected to continue into the future (Map 4).

The region’s sprawl compares poorly with other large metropolitan areas. Some of this is due to its high rate of local government fragmentation. As Figure 3 shows, more fragmented metropolitan areas tend to be sprawling faster than those with less fragmentation. Among the 50 largest metropolitan areas, the Detroit metro shows a high rate of sprawl and a moderately high degree of governmental fragmentation. Its sprawl rate is higher than would be predicted by its rate of fragmentation—indicated by the fact that Detroit’s sprawl rate is above the predicted line in Figure 3. Interestingly, two of the metropolitan areas showing the
DETROIT REGION:
Percentage Change per Year in Population
by Municipality, 1995-2005

Map 3

Legend
Regional Value: 0.3%
-5.8 to -1.1% (31)
-1.0 to -0.1% (74)
0.0 to 0.9% (70)
1.0 to 1.9% (61)
2.0 to 2.9% (49)
3.0% or more (37)
No data (3)

Data Source: U.S. Census Bureau.
Note: Municipalities with "no data" did not have population data for 1995.
Map 4

DETOUR REGION: Percentage Change per Year in Projected Population by Municipality, 2005-2030

Legend

Regional Value: 0.4%
-1.4 to -0.4% (22)
-0.3 to -0.1% (40)
0.0 to 0.9% (88)
1.0 to 1.9% (55)
2.0 to 2.7% (19)
3.0% or more (5)
No data (96)

Notes: Municipalities with "No data" did not have projected population data for 2030.

Data Source: SDMOA.
greatest difference between actual and predicted sprawl rates are the Twin Cities and Portland, the two large metropolitan areas with the most extensive regional planning systems in the country.

Much of the growth in the region happened not in municipalities, but in unincorporated townships. Between 2000 and 2030, unincorporated townships are projected to see 83 percent of all growth in the region (Figure 2). Development in these communities often “leapfrogs” far beyond the established urban edge.

In fact, from 1995 to 2005, population growth was fastest in places located over 30 miles from downtown Detroit and over 25 miles from downtown Flint, while municipalities within 15 miles from downtown Detroit almost all lost population (Map 3).

Piecemeal development in these places, which often have few building regulations, adds to public service costs and hastens the decline of farming. It also helps explain why Detroit is one of the Sierra Club’s “Most Sprawl-Threatened Cities.”

As the Detroit region has become more and more decentralized, jobs have followed people to the suburbs. Indeed, many areas in the suburbs are now commuting centers, with jobs outnumbering households (Map 5). This growth population growth even farther out on the fringes as fewer and fewer workers are tied to job locations in the central cities.

Approximately half of the region’s jobs are still in Wayne County in 2006 (top panel, Figure 4). However, the region’s core county is losing ground to suburban counties like Oakland and Macomb. This can be seen in the counties’ changes in employment (bottom panel, Figure 4). Between 1996 and 2001, when regional employment began to decline, Wayne County’s employment remained essentially stagnant with an increase of 0.1 percent. As regional declines continued from 2001 to 2006, Wayne County’s job losses (10.1 percent) outpaced those of the region as a whole (7.5 percent).

The effects of unbalanced growth harm entire regions, not just individual low-tax base communities. The environmental impacts of leapfrog growth, for instance, have been seen in recent outbreaks of algae and E. coli in area lakes. These outbreaks are largely the result of phosphorous from sources such as lawn fertilizers and failing septic tanks.

Unbalanced growth also leads to significant infrastructure costs. Statewide, voters passed a statewide bond in 2002 that dedicated $1 billion to providing new sewer infrastructure to cope with growth, even though the state’s population only grew by 6.9 percent from 1990 to 2000.
Figure 2: Projected Population Growth 2000-2030

Figure 3: Fragmentation and Sprawl in the 50 Largest Metropolitan Areas
Figure 4


Coupled with ample land for new housing and expanding transportation networks in other parts of the region, the socioeconomic decline of the region’s core communities also contributes to the region’s sprawling growth. This sprawl, which leads to the loss of farmland and green spaces and overwhelms small communities with congestion, is shown clearly in the Detroit region by long-term patterns of population decline in the core and growth in cities and township at the edge, despite slow overall population growth.

These facts help demonstrate that, for better or worse, the well-being of different parts of metropolitan areas are linked. In fact, the problems of declining neighborhoods, congested highways and degraded natural resources cannot be solved by communities working alone. Rather, they are regional problems requiring regional solutions.

The region’s problems go beyond unbalanced growth within the area, however. Over the past decade, the regional economy as a whole has performed very poorly. Comparisons to other metropolitan areas show this clearly. Figure 5 and Figure 6 show growth rates since 1991 for jobs and per capita income. Not only does the Detroit metropolitan area lag behind the two large metropolitan areas with the most extensive regional planning systems (the Twin Cities and Portland) in job growth, but it also trails other large Midwestern metropolitan areas. From 1991 to 2001, Detroit outperformed other Midwestern metropolitan areas in the growth of per-capita income, but that trend came to an end in 2001.

Sprawling development also contributes to a pattern of social separation that divides regions by income and race. As in most metropolitan areas, Detroit area residents are highly segregated. The social divide is clearly reflected in its schools.

The well-being of schools is important because they are leading indicators of community health. When the perceived quality of a school declines, it can set in motion a vicious cycle of middle-class flight and disinvestment. Many schools in older suburbs are now showing the same patterns of social change that occurred a generation or two ago in central cities. Decline in the core helps drive rapid growth on the edge, a pattern that stresses both places.

These patterns have especially harmful effects on people of color. In part due to subtle discrimination in the housing market, they are much more likely than whites to live in high-poverty areas. That means that segregated schools are very likely to be poor schools.

Concentrated poverty: The effects of poverty and other social needs in a region are often assumed to be confined to a few small neighborhoods. In reality, social separation and sprawl not only cause immediate harm to core cities, older inner-ring suburbs and fiscally-stressed developing suburbs, but also harm the rest of the region as well. As poverty intensifies in a community, those who can afford to will often choose to move away, depressing property values there and in surrounding areas. This flight threatens even high-capacity developing suburbs with eventual decline. Polarization limits the entire region’s ability to generate economic growth.
Figure 5: Job Growth, 1991-2006

Figure 6: Growth in Real Personal Income per Capita, 1991-2005
Map 5

DETOUR REGION:
Jobs per 100 Households by Municipality, 2002

[Map showing job distribution across municipalities with color coding and legend]

Legend
Regional Value: 114.2
- 0.0 to 15.8 (33)
- 17.0 to 39.8 (39)
- 41.2 to 62.1 (41)
- 65.2 to 100.0 (37)
- 100.9 to 173.8 (53)
- 180.4 or more (27)
- No data (1)

Note: Municipality with "No data" did not have sufficient data.

Data Source: Southeast Michigan Council of Governments; U.S. Census Bureau.
Poverty in Detroit area schools is highly concentrated in the region’s urban centers and adjacent suburban areas. School districts in these areas must serve high-need student populations, which is typically very expensive. Map 6 shows the areas of the Detroit region with higher-than-average concentrations of elementary students eligible for free or reduced-price lunch by school district in 2005. The vast majority of the elementary students in the region eligible for the free lunch programs attend schools in Wayne County.

Map 7 shows that the areas with increasing poverty in schools aren’t just in the central city. There are also significant increases in the stressed and at-risk developed suburbs around Detroit.

Concentrated poverty is important for several reasons. When school poverty reaches certain thresholds in a community, many middle-class families with children flee to other communities. This flight, in turn, negatively affects the housing market in the community and often creates a vicious cycle of disinvestment.13 As in most metropolitan areas, the most recent waves of transition in the Detroit area are in inner suburbs. However, the overall pattern shows a clear outward movement over time. The resulting transitions can be very rapid—so rapid that they can overwhelm the resources of individual communities.

Schools often experience social change faster than neighborhoods do because families with no children in the public school system (empty nesters, the young, and families with children in private schools) will often remain in a neighborhood past the time when most families with school-aged children in public schools flee. This can ease the increase in overall poverty rates. But ultimately, in most cases, when schools in a community reach certain thresholds of poverty and segregation, middle-class households of all types (i.e., households with residential choices) choose to live in other areas.

The flight of the middle class from a community strains both old and new communities. In fast-growing communities at the edge of the region, the middle class is streaming into increasingly overcrowded schools, a pattern that strains fiscal resources.

But the more powerful harms of this flight accrue to the people left behind in communities of concentrated poverty. High concentrations of poverty affect individual residents and their families as well as the community as a whole. Studies have found that poor individuals living in concentrated poverty are far more likely to become pregnant as teenagers,14 drop out of high school,15 and remain jobless16 than if they lived in socio-economically mixed neighborhoods. These types of outcomes dramatically diminish the quality of life and opportunity for residents who live in areas of concentrated poverty.

Similarly, the concentration of poverty and its attendant social isolation make education, job searches and general interaction with mainstream society difficult. The problems associated with concentrated poverty—everything from high crime to poor health—place a significant burden on municipal resources and discourage investment. The impact of concentrated poverty also extends into the larger regional economy by reducing the regional pool of skilled workers and otherwise creating a less attractive environment for economic growth and development.

This pattern of concentrated poverty especially harms people of color, who are much more likely than whites to live in high-poverty areas, in part due to subtle
discrimination in the housing market.\textsuperscript{17} Racial separation mirrors the poverty patterns. The Detroit region’s schools are among the most segregated in the country\textsuperscript{18} and poverty and race interact in ways greatly detrimental to minority students. It is clear from Map 8 that almost all of the schools with the highest concentrations of non-Asian minority students are also high-poverty schools. Map 9 shows that the schools with increasing minority enrollment are not in the central cities, but are mostly in the inner, stressed suburban areas around the central cities.

A growing body of research documents the interconnectedness of metropolitan economies. Unbridled competition for tax base discourages regional cooperation necessary to attract new business and often leads to unbalanced growth that creates a spatial mismatch between new jobs and available workers. When social and economic separation is minimized, the region is stronger.

Regional responses to these problems are thus necessary. Regional land use planning can limit the extent to which social and fiscal problems become concentrated in specific areas. Regional tax-base sharing can reduce the fiscal incentives for inefficient competition for tax-base that contributes sprawling development patterns. And regional economic development efforts can increase the size of the “pie” to be divided among the different parts of the region.
Map 6

DETOUR REGION:
Percentage of Students Eligible for Free or Reduced Lunch by Elementary School, 2005

Legend
Regional Value: 35.4%
- 0.0 to 8.2% (156)
- 8.4 to 18.3% (184)
- 18.6 to 35.3% (214)
- 35.4 to 55.3% (135)
- 54.2 to 87.8% (150)
- 88.4% or more (107)
- No data (40)

Note: Schools with "No-data" either did not report free lunch data or had fewer than 50 students in 2005.

Data Source: National Center for Education Statistics.
Map 7

DETROIT REGION: Change in Percentage Points of Students Eligible for Free Lunch by Elementary School, 1995-2005

Legend
Regional Value: 2.5
-79.6 to -1.9 (97)
-1.8 to 0.5 (107)
0.6 to 2.4 (112)
2.5 to 7.2 (218)
7.4 to 15.9 (187)
16.3 or more (119)
No data (146)

Data Source: National Center for Education Statistics.
Map 8

DETROIT REGION:
Percentage of Non-Asian Minority Students by Elementary School, 2005

Legend
Regional Value: 26.8%

- 0.0 to 2.9% (162)
- 3.0 to 5.4% (161)
- 5.5 to 9.9% (177)
- 10.0 to 26.6% (193)
- 26.8 to 86.6% (127)
- 89.0% or more (161)
- No data (5)

Note: Schools with "No data" had fewer than 50 students in 2005.

Data Source: National Center for Education Statistics.
DETROIT REGION:
Change in Percentage Points of Non-Asian Minority Students by Elementary School, 1995-2005

Legend
Regional Value: 2.1
-31.9 to -1.7 (72)
-1.5 to 0.7 (144)
0.8 to 2.0 (127)
2.1 to 6.4 (234)
6.5 to 14.7 (155)
15.2 or more (116)
No data (138)

Note: Schools with "No data" either did not report race data in 1995 or had fewer than 50 students in 1995 or 2005.

Data Source: National Center for Education Statistics.
Impact on Sensitive Natural Areas

Many of the sparsely-settled outer suburbs between Detroit and Flint have substantial reserves of natural areas, which serve critical roles for the region’s environmental health. In most of these suburbs, at least 20 percent of the total land area is classified as sensitive natural areas, and certain municipalities have over 30 percent sensitive natural areas (Map 10).

Sensitive natural areas have several important functions. They help to maintain the health of the regional ecosystem by providing core habitats which sustain biodiversity. They also act as a natural filter, reducing pollution in both groundwater and surface water. Finally, the mere existence of relatively pristine natural areas can be a recreational or scenic amenity for residents of the Detroit region.19

However, the same municipalities that have the largest amounts of sensitive natural areas are also the ones projected to see the highest growth in the coming decades (Map 4). If the current pattern of growth continues, will there be enough available land—land that is not sensitive, protected or already urbanized—to accommodate future growth while also conserving sensitive natural areas?

Our analysis indicates that, to a large extent, existing sensitive natural areas can be protected. From 2000 to 2030, the Southeast Michigan Council of Governments (SEMCOG) projects a population growth of 574,856, or 11.9 percent.20 Assuming that the projected growth rates remain the same, most municipalities will see less demand for growth than the amount of developable land available. With proper planning, the growth in these municipalities can be directed to the land most suitable for development while protecting the most sensitive lands.

There is no guarantee, of course, that growth will leave sensitive resources untouched simply because there is enough room elsewhere in a city or township. Because of the fragmented nature of sensitive natural areas, it is likely that at least some of them will be lost to development in each municipality.

In addition, there are some municipalities that will be faced with a greater demand for growth than they can accommodate. Assuming that SEMCOG’s growth projections are accurate, 20 communities will run out of developable land (Map 11). These communities may be forced to use sensitive land to meet their growth needs if it is not adequately protected, resulting in the loss of approximately 18,500 acres of sensitive land (Table 2).

It is possible to avoid the loss of these 18,500 acres by increasing density in municipalities projected to be overdeveloped, or by guiding this growth to places with additional developable land. There is ample developable land elsewhere in the region, even at current densities. Reallocating this growth, though—approximately 46,000 households—will require stronger regional planning and less intercity competition than has historically been the norm in the Detroit region.

Stronger regional planning will also be necessary if the Detroit region is to grow in a sustainable way in the long-term. The low consumption of sensitive natural areas projected for the next two decades is simply

Table 2: Impact of Growth in 2030

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitive Natural Areas (acres)</td>
<td>491,206</td>
<td>472,664</td>
</tr>
<tr>
<td>Urbanized Land (acres)</td>
<td>973,120</td>
<td>1,284,023</td>
</tr>
<tr>
<td>Available Land (acres)</td>
<td>1,610,661</td>
<td>1,299,305</td>
</tr>
</tbody>
</table>
the result of slow population growth, not strong environmental protections. From 2000 to 2007, the Detroit region only grew by an estimated 0.3 percent; out of the 50 largest metropolitan areas in the region, Detroit was ranked 45th in growth during this time period. SEMCOG’s projected growth of 11.9 percent over 30 years amounts to only 0.9 percent per year.

Even with this slow growth, Detroit has seen a disproportionately rapid growth in urbanized land, fueled by flight from the core and increasingly low densities. Between 1970 and 2000, despite the fact that population in the region grew by only 3 percent, the amount of developed land increased nearly 75 percent. From 2000 to 2030, while the population is expected to grow by only 11.9 percent, urbanized land could grow by over 30 percent if current population densities in each municipality are maintained (Figure 7).

Sprawl in Detroit could be even worse if past trends continue. If housing densities were to continue to decline as they have been doing for the past several decades, urbanized land would grow by over 175 percent, and approximately 65,000 acres of sensitive natural areas would be lost; approximately the combined size of Huron, Romulus, and Sumpter.

![Figure 7: Projected Growth Through 2030](image_url)
CREATION OF THE SENSITIVE NATURAL AREAS MAP

The Sensitive Natural Areas Map combines 7 different existing data layers of varying ages. While some data sets are relatively current, others like the National Wetlands Inventory date back to 1979-1994. As a result, this map represents a “still shot in time” and the best approximation of remaining regional natural resources in 2007.

Initially, two separate natural resource layers were developed using different databases: Sensitive Aquatic Areas, and Sensitive Land Areas. These two layers were then combined to create the final SNA map. Although natural resources are not constrained by jurisdictional boundaries, municipal boundaries were overlain on the resource map for purposes of analysis by cities and townships. By aggregating the two categories of sensitive natural areas and calculating percentages by municipality (Map 10), remaining sensitive natural areas could be compared directly with demographic, fiscal and economic data used in analysis by Ameregis.

The data sets used in the creation of the two separate natural resource layers included:

**Sensitive Aquatic Areas:**
- Trout Streams (2000)
- Wetlands (1979-1994; from the National Wetlands Inventory, Cowardin Classes 4 through 8)

**Sensitive Land Areas:**
- Trout Stream Protection Zone (2000)
- Steep Slopes
- Wetlands (1979-1994; from the National Wetlands Inventory, Cowardin Classes 1 through 3)

As a final caveat, this regional mapping of natural resources is not of sufficient resolution to detect remaining natural resources at the local level. Ground truthing is required to verify the presence and distribution of resources at this scale.
Map 11

DETROIT REGION: Acres of Sensitive Natural Areas Projected to be lost to Development in Municipalities by 2030

Legend
- 7.2 to 46.3 (4)
- 65.3 to 374.8 (5)
- 396.6 to 1,785.7 (5)
- 1,917.3 or more (5)

Data Source: Michigan Center for Geographic Information.
Transportation and Commuting

Analysis of transportation and commuting patterns identified 21 job centers in the Detroit region (Table 3). Much like the areas of fastest population growth, most of these are located in the northwest (Map 14). Most also have access to the region’s major interstates.

Job centers were grouped into four categories – Detroit’s central business district; other central city job centers; inner suburbs; and other suburbs. Three quarters of clustered jobs are suburban, with slightly more jobs in the outer suburbs than inner suburbs (Table 4). The central business district (CBD) represented only 3 percent of regional employment in 2000—a very low number for a major metropolitan region. For comparison, Houston, Philadelphia, and Portland had 8 percent, 10 percent, and 22 percent of regional employment in the central business district in 2000, respectively.

Only about a third of regional jobs were clustered at all. This is also a very low percentage. For instance, 54 and 52 percent of regional jobs in Atlanta and the Twin Cities are in job centers. The Detroit share is also lower than in Houston, Chicago, Los Angeles and Portland. Among the metropolitan areas we have studied, only Philadelphia showed a lower share of jobs in job centers.

In 2000, just 9 percent of regional jobs were in the two central city categories, down from 11 percent in 1990. The share of jobs in the 2 suburban categories was 27 percent in 2000, up from 22 percent in 1990 (Table 4). Essentially, job center growth rates increased with distance from the central cities of the region, with central-city job centers actually losing jobs.

In fact, Detroit’s CBD is no longer the largest job center. It was eclipsed in 1990 by Birmingham-Madison Heights-Troy (Table 3), and in 2000 it was only the third largest in the region, after Birmingham-Madison Heights-Troy and Southfield City-Farmington Hills-Southfield Township. However, it remains by far the most densely clustered job center, at nearly six times the density of the next-most dense center (Table 3).

Most other central city job centers saw declines as well. The only central city center to register an increase in jobs in 2000 was Ann Arbor (Table 3). Certain suburban job centers—such as Sterling Heights-Warren and Plymouth—also saw decreases, but those decreases were small compared to the rapid growth of other suburban job centers.

The relationship between growth rates and distance from the central city can be seen clearly in Map 14. The map shows that job centers in the central city all declined, while those with the highest growth were those farthest from the central city. The map also emphasizes the northwestern portion of the region’s status as the “favored sector.” Job centers directly to the north or west declined, while those in the northwest sector all saw growth.

The fact that suburban job centers have seen the greatest growth has taxed regional infrastructure. The strain on the region’s transportation is indicated by the shrinking of suburbs’ commuter sheds, or the area from which workers can commute to the job center within a given amount of time. The area accessible within a 20-minute commute—the 20-minute commuter shed—declined by nearly 30 percent in the inner suburbs, and by over 35 percent in other suburbs from 1990 to 2000 (Table 5). This is clear evidence of rising congestion and slowing traffic speeds. Cities also
experienced large decreases in their 20-minute commuter shed areas, indicating that congestion is increasing regionwide.

The impacts of fast-growing suburban job centers are made clearer when looking at decreases in the areas of job centers’ 40-minute commuter sheds. The area accessible within a 40-minute commute to suburban job centers decreased by nearly 15 percent from 1990 to 2000 (Table 5), while the 40-minute commuter shed for central city job centers shrank less than 5 percent.

The contraction of suburban commuter sheds (compared to those in central cities) is to be expected, because suburban job centers are growing while central city job centers are stagnant or declining (Table 4). The growth of these job centers brings many benefits to the municipalities where they are located. However, they also bring significant costs as these cities must cope with the effects of rapid growth. Suburban job centers require significant investments in infrastructure, and the decreasing size of commuter sheds indicates that these investments are unable to keep up with the demand.

As larger proportions of residents are living and working in the suburbs, the impact of congestion around suburban job centers can increasingly be felt around the region. One way in which the new spatial pattern is manifesting itself is in longer commute times. In 2000, 19.4 percent of commuters took over 40 minutes to get to work, up from 15.4 percent of commuters in 1990, according to Census data.

One example, Auburn Hills-Orion, is shown in the maps below. From 1990 to 2000, the area in which this inner-suburban job center was accessible by a 20-minute commute

### TRANSPORTATION AND COMMUTING ANALYSIS

The transportation and commuting analysis began by identifying the region’s job centers. Census Transportation Planning Package (CTPP) data for 1990 and 2000 were used to find both small- and large-scale job centers and to show the racial breakdowns of the workers commuting to each center. Job centers were defined as contiguous Traffic Analysis Zones (TAZs) with at least 5,000 jobs per square mile and total employment exceeding 10,000 jobs. Large job agglomerations like those in Detroit were divided into multiple job centers based on job densities in different parts of the larger clusters. We also identified smaller job clusters, with at least 2,500 jobs per square mile.

The job centers and clusters were divided into four categories based on location:
1. The Central Business District (CBD) was the highest-density portion of the job centers in the core of Detroit.
2. Other Central City job centers are those in the remainder of the central city.
3. Inner Suburban job centers are those in suburbs that border the central city.
4. Other Suburban centers are those in the remainder of the suburbs.

To evaluate access to job centers, we analyzed the commuting time to each job center. Journey-to-work data from the CTPP show how many resident workers from each TAZ work in every other TAZ in the region, along with the median travel time for each pair of TAZs. Geographic Information System techniques were used to derive the area around each job center accessible within a 20-, 30- and 40-minute commute. shrunk by over 40 percent. The 40-minute commute zone shrunk by nearly 33 percent. This decrease in the commuter shed—which indicates an increase in commute times—has been driven by rapid growth in the
Auburn Hills-Orion job center.

The lengthening commute will have negative consequences for Auburn-Hills Orion in the long run, as it will decrease the attractiveness of the job center.

Shifting spatial patterns of employment have not had equal impacts on all members of society. Many more whites than blacks have easy access to growing outer-suburban job centers, while black workers are often limited to declining job centers in and around the central city. In 2000, Black workers were much more likely to work in declining central-city job centers than other population groups. Black workers represented nearly half of all workers in the central business district, though they represent less than 20 percent of the regional population. In other suburban job centers, on the other hand, they represented only 11 percent of all workers (Table 6).

In 2000, 20 percent of all Black workers worked in central city job centers compared to just 7 percent of Whites, 12 percent of Hispanics and 16 percent of Asians (Table 7). Similarly, Black workers were least likely to work in the fastest growing category – other suburban centers. Eight percent of Black workers worked in these areas in 2000, compared to 12 and 16 percent of Whites and Asians, respectively (Table 7).
DETROIT REGION:
Employment Centers and Clusters by Job Growth

Legend
- Decline
- Slow Growth
- Moderate Growth
- High Growth

Data Source: Census Transportation Planning Package, U.S. Department of Transportation.

Map 14
Table 3: Employment by Job Center

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Detroit-CBD</td>
<td>Central Business District</td>
<td>93,451</td>
<td>79,691</td>
<td>-15</td>
<td>61,685</td>
</tr>
<tr>
<td>Detroit-North</td>
<td>Other Central City</td>
<td>70,719</td>
<td>61,698</td>
<td>-13</td>
<td>10,266</td>
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<tr>
<td>Detroit-East</td>
<td>Other Central City</td>
<td>13,977</td>
<td>9,959</td>
<td>-29</td>
<td>5,187</td>
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<tr>
<td>Ann Arbor</td>
<td>Other Central City</td>
<td>47,904</td>
<td>45,937</td>
<td>-4</td>
<td>32,123</td>
</tr>
<tr>
<td>Flint</td>
<td>Other Central City</td>
<td>15,234</td>
<td>13,210</td>
<td>-13</td>
<td>13,850</td>
</tr>
<tr>
<td>Ann Arbor</td>
<td>Other Central City</td>
<td>10,418</td>
<td>18,102</td>
<td>74</td>
<td>8,575</td>
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<td>Dearborn</td>
<td>Inner Suburban</td>
<td>59,859</td>
<td>66,810</td>
<td>12</td>
<td>8,688</td>
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<tr>
<td>Sterling Heights-Warren</td>
<td>Inner Suburban</td>
<td>87,583</td>
<td>76,203</td>
<td>-13</td>
<td>5,649</td>
</tr>
<tr>
<td>Southfield City-Farmington</td>
<td>Inner Suburban</td>
<td>52,209</td>
<td>94,562</td>
<td>81</td>
<td>10,713</td>
</tr>
<tr>
<td>Hills-Southfield Twp</td>
<td>Inner Suburban</td>
<td>12,747</td>
<td>21,493</td>
<td>69</td>
<td>5,857</td>
</tr>
<tr>
<td>Southfield City</td>
<td>Inner Suburban</td>
<td>13,847</td>
<td>19,972</td>
<td>44</td>
<td>12,123</td>
</tr>
<tr>
<td>Dearborn CBD</td>
<td>Inner Suburban</td>
<td>10,547</td>
<td>10,282</td>
<td>-3</td>
<td>4,360</td>
</tr>
<tr>
<td>Livonia</td>
<td>Other Suburban</td>
<td>44,971</td>
<td>39,113</td>
<td>-13</td>
<td>6,641</td>
</tr>
<tr>
<td>Birmingham-Madison Heights-Troy</td>
<td>Other Suburban</td>
<td>95,658</td>
<td>101,221</td>
<td>6</td>
<td>6,314</td>
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<tr>
<td>Auburn Hills-Orion</td>
<td>Other Suburban</td>
<td>7,995</td>
<td>25,442</td>
<td>218</td>
<td>6,881</td>
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<tr>
<td>Rochester</td>
<td>Other Suburban</td>
<td>10,639</td>
<td>16,481</td>
<td>55</td>
<td>7,248</td>
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<tr>
<td>Auburn Hills-Rochester Hills</td>
<td>Other Suburban</td>
<td>10,990</td>
<td>61,188</td>
<td>457</td>
<td>9,198</td>
</tr>
<tr>
<td>Pontiac-Bloomfield-Waterford</td>
<td>Other Suburban</td>
<td>35,040</td>
<td>62,059</td>
<td>77</td>
<td>9,758</td>
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<tr>
<td>Farmington Hills</td>
<td>Other Suburban</td>
<td>12,757</td>
<td>30,616</td>
<td>140</td>
<td>10,121</td>
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<tr>
<td>Novi</td>
<td>Other Suburban</td>
<td>6,489</td>
<td>20,718</td>
<td>219</td>
<td>6,439</td>
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<tr>
<td>Plymouth</td>
<td>Other Suburban</td>
<td>13,095</td>
<td>10,978</td>
<td>-16</td>
<td>4,866</td>
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<tr>
<td>Total for all job centers</td>
<td></td>
<td>726,129</td>
<td>885,735</td>
<td>22</td>
<td>8,787</td>
</tr>
<tr>
<td>Non-clustered jobs</td>
<td></td>
<td>1,385,802</td>
<td>1,548,260</td>
<td>12</td>
<td>234</td>
</tr>
<tr>
<td>Full Detroit region</td>
<td></td>
<td>2,111,931</td>
<td>2,433,995</td>
<td>15</td>
<td>362</td>
</tr>
</tbody>
</table>

Table 4: Employment by Job Center Type

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Business District</td>
<td>93,451</td>
<td>4</td>
<td>79,691</td>
<td>3</td>
<td>-15</td>
</tr>
<tr>
<td>Other Central City</td>
<td>158,252</td>
<td>7</td>
<td>148,906</td>
<td>6</td>
<td>-6</td>
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<tr>
<td>Inner Suburban</td>
<td>236,792</td>
<td>11</td>
<td>289,322</td>
<td>12</td>
<td>22</td>
</tr>
<tr>
<td>Other Suburban</td>
<td>237,634</td>
<td>11</td>
<td>367,816</td>
<td>15</td>
<td>55</td>
</tr>
<tr>
<td>Total – All Job Centers</td>
<td>726,129</td>
<td>34</td>
<td>885,735</td>
<td>36</td>
<td>22</td>
</tr>
<tr>
<td>Non-Clustered Employment</td>
<td>1,385,802</td>
<td>66</td>
<td>1,548,260</td>
<td>64</td>
<td>12</td>
</tr>
<tr>
<td>Total – Detroit Metropolitan Region</td>
<td>2,111,931</td>
<td>100</td>
<td>2,433,995</td>
<td>100</td>
<td>15</td>
</tr>
</tbody>
</table>
Table 5: Change in Commuter Shed Distance

<table>
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<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Central Business District</td>
<td>-66.1</td>
<td>-1.8</td>
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<tr>
<td>Other Central City</td>
<td>-31.3</td>
<td>-4.2</td>
</tr>
<tr>
<td>Inner Suburban</td>
<td>-29.6</td>
<td>-15.5</td>
</tr>
<tr>
<td>Outer Suburban</td>
<td>-35.5</td>
<td>-14.8</td>
</tr>
<tr>
<td>Total – All Job Centers</td>
<td>-33.7</td>
<td>-12.4</td>
</tr>
</tbody>
</table>

Table 6: Racial Breakdown of Workers in 2000 (%)

<table>
<thead>
<tr>
<th>Job center type</th>
<th>Non-Hispanic</th>
<th>Hispanic</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
<td>Black</td>
<td>Asian</td>
</tr>
<tr>
<td>Central Business District</td>
<td>48</td>
<td>44</td>
<td>2</td>
</tr>
<tr>
<td>Other Central City</td>
<td>62</td>
<td>28</td>
<td>5</td>
</tr>
<tr>
<td>Inner Suburban</td>
<td>75</td>
<td>17</td>
<td>4</td>
</tr>
<tr>
<td>Outer Suburban</td>
<td>81</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Total – All Job Centers</td>
<td>72</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>Non-clustered Employment</td>
<td>80</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>Total – Detroit region</td>
<td>77</td>
<td>16</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 7: Percentage of Total Regional Workers

<table>
<thead>
<tr>
<th>Job center type</th>
<th>Non-Hispanic</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>Central Business District</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Other Central City</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Inner Suburban</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Outer Suburban</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Total – All Job Centers</td>
<td>29</td>
<td>39</td>
</tr>
<tr>
<td>Non-clustered Employment</td>
<td>71</td>
<td>61</td>
</tr>
<tr>
<td>Total – Detroit region</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
Fiscal Inequality

Metropolitan Detroit has a relatively fragmented system of local government, and its municipal governments rely heavily on locally generated tax revenues to pay for public services. About 90 percent of government revenues in the region are own-source revenues, as opposed to intergovernmental transfers. The primary local taxes are the traditional property tax and the local income tax. Most states do not have local income taxes at all. Michigan is one of only twelve states with a local income tax, and only nine municipalities in the Detroit region have implemented the tax.

Communities face significant, often overwhelming, pressures to compete for development that will expand their property and payroll tax bases. These pressures often drive local land-use planning decisions, encourage sprawl and increase economic and social disparities.

Localities pay attention to the net effect that any new development will have on local revenues and expenditures—on whether the proposed development “pays its way.” To win the most profitable land uses, local governments may offer public subsidies or infrastructure improvements. But perhaps the most common approach is “fiscal zoning”—making land-use decisions not based on the suitability of the land or the long-term needs of the region, but on the tax revenue a development can generate right away in a small part of the region. For example, many communities lay out great tracts of land for commercial development, regardless of whether it is the most appropriate use for the location.

This competition is costly in several ways. First, from the entire region’s perspective, it is wasteful of public resources. Public sector time, effort and money is likely to be expended to affect the location of businesses that would have located somewhere in the region anyway. Second, the competition can contribute to vicious cycles of decline. If a business relocates from one municipality to another, the loser must either raise tax rates to maintain revenues or decrease the amount or quality of services, diminishing its attractiveness to businesses in the next round of competition. Third, such uncoordinated competition often makes the task of providing regional infrastructure more expensive than it has to be. Finally, the income tax (either combined with a property tax or on its own) increases the fiscal benefits to localities of business compared to residential development. This can lead to inadequate provision of housing, especially affordable housing.

The most unusual feature of the local fiscal environment in Michigan is the income tax. Although the availability of this tax provides some advantages by diversifying local revenue systems and providing some potential to tax non-resident consumers of a locality’s public services, it is unlikely to provide all of the fiscal benefits that it promises.

While a local payroll tax appears to be taxing resident workers and non-resident commuters, much of the tax is actually borne by local businesses. Businesses in a high-payroll-tax municipality are likely to bear the brunt of any tax differentials in the form of wage premiums paid to workers. Those in professions with employment opportunities throughout the region will opt for a job in a high payroll tax place only if they are compensated for the extra cost in some way. This generally means higher wages.

Businesses therefore have a strong incentive to avoid income taxes when making location
decisions. This should be particularly true of labor-intensive businesses with high wages – the Holy Grail for local economic development planners. Differences in income tax rates across the region can thus create location incentives.

In addition, the surest way for a business to avoid the extra cost associated with higher than average payroll taxes is to locate in areas without the tax. This is yet one more factor pushing economic activity away from already developed areas, with infrastructure already in place.

Map 15 and Map 16 show the distribution of property tax base across the region and how it has changed in recent years. Fiscal disparities are relatively wide. Property tax base per household ranged from just $25,682 per household in Highland Park to more than a half-million dollars per household in Bloomfield Hills. There are 28 cities, villages and townships across the region with property tax bases less than $50,000 per household while, at the same time, there are 7 with property tax bases of more than $300,000 per household.

In 2005, the ratio of the tax base in the 95th percentile place – the municipality or township with a tax base greater than 95 percent of places in the region – to that in the 5th percentile place was 4.3. This means that the 5th percentile municipality would have to assess a property tax rate 4.3 times higher than the 95th percentile place in order to generate the same revenues per household.

The lowest tax bases are mostly found in Detroit, its inner suburbs, and at the edges of the region; there are also a number of municipalities with lower tax bases clustered southwest of Detroit. The highest tax bases can be found in the middle- to outer-ring suburbs, particularly those to the northwest of Detroit.
These changes indicate an increasing gap between the poorest and most affluent suburbs. The tax base in affluent suburbs grew at a much faster rate, and is now nearly three times that in stressed suburbs. The tax base in affluent suburbs also grew at a faster rate than the central cities', and is now nearly five times as large.

One reason for the area’s fiscal inequities is its high degree of local government fragmentation. Figure 9 shows that more fragmented metropolitan areas tend to be show greater inequities in local tax bases. Among the 50 largest metropolitan areas, the Detroit metro shows both a high degree of fiscal inequality and a moderately high degree of governmental fragmentation. However, its inequality rate is even higher than would be predicted by its high rate of fragmentation—indicated by the fact that Detroit’s inequality rate is above the predicted line in Figure 9. As with sprawl, two of the metropolitan areas showing fiscal inequality less than the predicted rates are the Twin Cities and Portland, the two large metropolitan areas with the most extensive regional planning systems. In the Twin Cities, the Fiscal Disparities regional tax-base sharing program further helps to reduce disparities by redistributing a portion of the commercial-industrial tax base (for more detail, see p. 42).

The implications of Detroit’s wide property tax base disparities are important. Municipalities at the low end of the spectrum face a very difficult choice between providing regionally competitive levels of local public services like police and fire protection by assessing tax rates that are higher than their regional counterparts – sometimes much higher – and assessing competitive tax rates while providing much lower than average local services. Either combination puts them at a serious disadvantage when competing for new residents or businesses. Tax base disparities of this magnitude clearly create the potential for vicious cycles of decline in low tax base places.

Table 8: Change in Property Tax Base

<table>
<thead>
<tr>
<th>Community Type</th>
<th>2005 Percentage of Regional Households</th>
<th>2005 Median Property Tax Base per Household</th>
<th>1995 - 2005 Percent Change in Property Tax Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central City</td>
<td>17</td>
<td>$31,908</td>
<td>64</td>
</tr>
<tr>
<td>Stressed</td>
<td>10</td>
<td>$51,738</td>
<td>48</td>
</tr>
<tr>
<td>At-Risk, Developed</td>
<td>21</td>
<td>$73,690</td>
<td>56</td>
</tr>
<tr>
<td>At-Risk, Developing</td>
<td>18</td>
<td>$84,866</td>
<td>60</td>
</tr>
<tr>
<td>Bedroom Developing</td>
<td>7</td>
<td>$103,271</td>
<td>60</td>
</tr>
<tr>
<td>Suburban Job Centers</td>
<td>15</td>
<td>$116,810</td>
<td>57</td>
</tr>
<tr>
<td>Affluent Residential</td>
<td>11</td>
<td>$151,865</td>
<td>72</td>
</tr>
<tr>
<td>Region</td>
<td>100</td>
<td>$87,452</td>
<td>68</td>
</tr>
</tbody>
</table>
Figure 8

Detroit Employment Compared to Region

![Graph showing Detroit employment compared to the region from 1990 to 2030.](image)

Source: SEMCOG 2030 Regional Forecast

Figure 9

Fragmentation and Fiscal Inequality in the 50 Largest Metropolitan Areas

![Graph depicting fragmentation and fiscal inequality.](image)
Map 15

DETOUR REGION:
Property Tax Base per Household by Municipality, 2005

Legend
Regional Value: $87,685
$25,682 to $56,878 (46)
$57,993 to $73,951 (64)
$75,164 to $87,511 (52)
$87,685 to $104,754 (55)
$106,136 to $138,515 (64)
$142,491 or more (40)
No data (3)

Data Source: Michigan Department of Treasury, State Tax Commission.

Note: Municipalities with "No Data" either did not have sufficient data or had fewer than 50 households in 2005.
Looking Forward: Strategies for Regional Reform

The Detroit region faces serious economic and social difficulties. Uncoordinated growth, widening fiscal disparities and concentrated poverty threaten the area’s ability to grow consistently, or in ways that benefit all its residents. The fragmented nature of the political and planning system—more than 300 cities, villages and townships (many unincorporated) in 10 counties—makes it unlikely that reform at the local level alone will solve the region’s problems. Solutions must focus on regional initiatives. Objectives for these initiatives should focus on:

- Promoting consistent growth in the region to benefit all its citizens.
- Achieving orderly, efficient and sustainable development practices.
- Increasing collaboration across governmental structures.

The policy areas where reforms are most needed to achieve these ends include:

- Fiscal reforms to reduce incentives for inefficient inter-local competition for tax base and to narrow resource disparities among local governments.
- Smarter land-use planning.
- Strengthened metropolitan governance to give all communities a voice in regional decision-making.

In addition to addressing individual problems, these strategies are mutually reinforcing. Successfully implementing one makes implementing others much easier, both substantively and politically.

Fiscal Equity

Tax-base sharing is one way to significantly improve both the equity and efficiency of the regional fiscal system. In such a system, a portion of local tax base is put into a regional pool which is then redistributed back to local areas based on some criteria other than their contributions to the pool.

The redistribution formula can take a variety of forms. It can be aggressively redistributive – using local tax base or poverty rates as a primary component, for instance. Or it can be relatively neutral – using local population or household counts. It can also be designed to compensate local areas for extra costs of public services. The age of the housing stock—a good proxy for the age of infrastructure—could be used in this way. In any of these cases, because contributions to the pool are based on local tax bases, the net effect of the system will be to reduce fiscal disparities across the region.

If the contribution formula is designed properly, tax-base sharing can also improve the efficiency of the local tax system. In the model used in the largest tax-base sharing system in the United States—the Twin Cities Fiscal Disparities program—communities contribute 40 percent of the increase in commercial-industrial property tax base to the pool, which is then redistributed with a formula based on population and local tax base. On the one hand, the design reduces the incentives for communities to compete for tax base, because they do not keep all of the resulting revenues. On the other hand, because localities retain enough of the tax base to cover the costs of growth, the incentive is not so strong that local areas will be unwilling to allow new development.
Tax-base sharing can thus be designed to serve several purposes. It can:

- Encourage joint regional or multi-jurisdictional economic development efforts by ensuring that all share in the benefits of regional growth;
- Complement regional land-use planning efforts by reducing the stakes for individual jurisdictions in the location of specific economic activities and by spreading the benefits of regional developments;
- Reduce the incentives for localities to compete with each for tax-base;
- Reduce inequalities in tax-base, tax rates and local public services.

As noted above, the Twin Cities Fiscal Disparities Program is the best existing example of regional tax base sharing. The Fiscal Disparities Program covers the seven core counties of the Twin Cities metropolitan area. There are more than 192 municipalities, 50 school districts and more than 100 special districts covered by the program. In existence since 1971, it pools 40 percent of the growth in commercial-industrial tax base since that time and redistributes it based on population of total local property tax base per capita.

As of 2004, 32 percent of the region’s commercial-industrial tax base was in the pool and 64 percent of the region’s population lived in municipalities that were net beneficiaries of the program. The program reduces tax base inequality in the region by about 20 percent, as measured by the Gini coefficient. The effects are even more pronounced at the extremes of the distribution. The program reduces the ratio of the highest to lowest tax base per household from 25 to eight, and of the second highest to second lowest from 10 to four. The region’s two central cities are affected in significantly different ways. St. Paul, with much of its prime real estate devoted to state office buildings and other non-profit purposes, is a major beneficiary of the program. Its average tax on a homesteaded residence is about nine percent lower than it would be in the absence of the program. Minneapolis, on the other hand, has had periods when it contributed more to the pool than it received from it and other times when it has been a net receiver.

In principle, tax-base sharing can be employed with any local tax. In Detroit, the primary candidate is the property tax. Simulations of tax-base sharing in the Detroit region (Map 17) show that it would benefit 65 percent of the region’s households. It would also significantly reduce disparities: the ratio between the highest and the lowest tax base per household would be reduced by one-third from 21 to 14, and the ratio between the 95th and 5th-percentile places would drop by over 25 percent, from 4.4 to 3.2.
Map 17

DETOUR REGION:
Simulated Change in Tax Capacity per Household as a
Result of Redistribution of 40% of Tax Base Growth
According to Income per Capita by Municipality, 2005

Legend
- $75,866 to - $14,786 (38)
- $14,215 to - $3,396 (76)
- $3,129 to - $136 (53)
$9 to $3,268 (50)
$3,518 to $9,177 (74)
$9,430 or more (30)
No data (4)

Data Sources: Michigan Department of Treasury, State Tax Commission; U.S. Census Bureau.
Regional Land-Use Planning

Fiscal issues are only part of the reason for inequitable and inefficient growth occurring in the Detroit region. The localized nature of planning also contributes to unbalanced growth. This arrangement makes it difficult to implement coherent policies in areas with regional implications, such as environmental protection, housing, transportation or economic development. There are many costs associated with fragmented planning and unbalanced growth. Valuable agricultural land and sensitive open space is destroyed. Traffic congestion increases. Expensive public infrastructure is built on the urban edge, while existing facilities within cities are underutilized, and sometimes abandoned.

The localized nature of planning in Michigan—with power fragmented among thousands of governments—clearly contributes to unbalanced growth patterns. The 10 county study area for this work includes 323 cities, villages and townships. The region is the 15th-most fragmented among the 50 largest metropolitan areas in the country. Even the small amount of regional planning that occurs in the region is divided among three metropolitan planning organizations.

Outward growth, combined with policies that focus on building new infrastructure over maintaining the facilities already in place, hurt older places in and near the urban core. Considering that significant investments in infrastructure and housing have already been made in those areas, state (and often federal) investments in roads in previously undeveloped areas are a waste of taxpayers’ limited resources. They not only encourage additional growth in outlying communities, they further divert resources from existing communities that arguably need them the most.

Developing a cooperative framework for land-use planning that encourages places to plan together for their common future and to consider the regional consequences of local decisions is an essential aspect of a regional reform agenda. This kind of thinking has been implemented in several states over the last 25 years and is receiving increasing attention across the country.

“Smart growth” is an efficient and environmentally friendly pattern of development that focuses growth near existing public facilities. Smart growth provides people choice in where they live and work and how they get around. Based on the premise that regions can make more efficient use of their land through cooperation rather than competition, smart growth initiatives essentially call for local planning with a regional perspective.

At least 16 states have already adopted comprehensive smart growth acts, and their ranks are growing. Regional land use planning efforts, like those required in Oregon’s statewide program, help officials coordinate investments in roads, highways, sewers and utilities. Concurrency requirements like those in Florida mandate that infrastructure be on-line by the time development takes place. In addition, there are a variety of agricultural and open-space preservation programs available, as well as incentives for the use of New Urbanist design principles.34

All these initiatives share goals: to reduce the destruction of open space and agricultural lands; to ease traffic congestion by creating an accessible and balanced transportation system; and to make more efficient use of public investments.
Ensuring that all communities in the region, particularly those with new jobs and good schools, strengthen their commitment to affordable housing is another essential component of smart growth planning because it helps to reduce the consequences of concentrated poverty on core communities. It allows people to live closer to work and provides them with real choices concerning where they want to live.

**Regionally Coordinated Growth**

With regional planning, the amount of land urbanized over the next several decades can be minimized to keep it roughly in proportion to population growth. There are two methods that could be used to improve the region’s land-use planning: establishing minimum densities and/or creating a metropolitan urban service line or growth boundary.

One method for reducing sprawl would be to require increased residential density, by enacting new zoning codes with minimum densities instead of maximums. New development between 3 and 4.5 dwelling units per acre—moderately high suburban densities—would bring the growth of urbanized land in line with the growth in households.

Moving from an existing median residential density of 2.1 dwelling units per acre, an increase in the density of new development to 3.6 units per acre would decrease the growth of urbanized land from over 30 percent to under 14 percent, compared to a 12 percent increase in population. Under this scenario, lost sensitive natural areas would decrease from 18,500 acres under conventional development to only 2,750 acres.

Another way to reduce sprawl without mandating increased densities is to establish an urban service area, inside of which urban services and infrastructure are provided, and outside of which townships’ rural characters are protected. By strengthening regional planning efforts and directing growth inside the urban service area, the Detroit region could eliminate leapfrog development that wastes resources and drives up the price of creating infrastructure. For example, by establishing the urban service area shown in Map 18, lost sensitive areas would decrease from 18,500 acres to approximately 9,000 acres, and the growth of urbanized land would decline from over 30 percent to under 21 percent—without mandating any increases in density. This would be achieved by reducing leapfrog development and filling in developing municipalities first. Table 9 clearly shows how regionally-coordinated growth would reduce sprawl compared to allowing current trends to continue.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Sensitive natural areas (acres)</th>
<th>Urbanized land (acres)</th>
<th>Increase in population</th>
<th>Increase in urbanized land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Conditions (2000)</td>
<td>491,206</td>
<td>973,120</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Forecasts (2030)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Densities remain the same&lt;sup&gt;35&lt;/sup&gt;</td>
<td>472,664</td>
<td>1,284,023</td>
<td>12%</td>
<td>32%</td>
</tr>
<tr>
<td>Densities continue to decrease&lt;sup&gt;36&lt;/sup&gt;</td>
<td>426,014</td>
<td>1,715,473</td>
<td>12%</td>
<td>97%</td>
</tr>
<tr>
<td>Minimum densities are established&lt;sup&gt;37&lt;/sup&gt;</td>
<td>488,459</td>
<td>1,104,377</td>
<td>12%</td>
<td>13%</td>
</tr>
<tr>
<td>An urban service area is established&lt;sup&gt;38&lt;/sup&gt;</td>
<td>482,087</td>
<td>1,175,688</td>
<td>12%</td>
<td>21%</td>
</tr>
</tbody>
</table>
Regional Governance

A primary theme of this study is that highly fragmented governance and planning systems like that seen in the Detroit area harm not just central cities, but all parts of the region. The resulting internecine competition intensifies social separation and sprawling development patterns and discourages the creation of coordinated strategies for dealing with these problems.

Effective, efficient regional efforts strike a balance by allowing local control over issues best addressed by local governments, while promoting cooperation on larger issues affecting the entire region, such as highway and sewer investments, affordable housing, transit, land-use planning, air and water quality, and economic development.

A wide variety of options are available to improve regional decision-making. These include strengthening existing regional organizations, finding new ways to encourage inter-local cooperation, and creating new institutions to plan or provide services on a regional scale.

There are already regional institutions in place that can serve as a backbone for regional reform. For instance, the Southeast Michigan Council of Governments (SEMCOG)—representing Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties—already has the power to undertake many planning functions, including transportation, water, and air quality planning, in addition to analyzing regional data, providing planning assistance for local governments, and facilitating local cooperation. The Genesee County Metropolitan Planning Organization and Region 2 Planning Commission have similar planning functions.

A council of governments such as SEMCOG with jurisdiction over all ten counties, and armed with greater land-use powers, could make headway on a whole host of regional issues. Other models of governance, including establishing new, freestanding bodies to oversee regional issues from land-use planning to transit—the model established in the Portland and Minneapolis-St. Paul regions—exist as well.

In addition to encompassing the entire ten-county region and expanding land-use powers, any new or revamped regional body should ensure the equal representation of inner cities and developed suburbs. SEMCOG’s modified “one municipality, one vote” system means that small, growing cities on the fringes of the region have power disproportionate to their size. For example, a 2006 Brooking Institution report found that using a voting system based on weighted population would increase the power of Detroit’s vote by 36 percent.

In response to a lawsuit by Moses, Inc., Transportation Riders United, the city of Ferndale, and others, SEMCOG added a population-weighted voting system to its procedures. Now, proposals must receive a majority under both the municipal representation system and the population weighted system to pass. In some ways, this solves the representation problem, although some argue that small outer-suburban municipalities can still use the municipal representation system to kill measures against their interests.

One way to avoid controversy over the weighting of votes is to move from a council-of-governments structure to a freestanding, district-based structure. Rather than each municipality having one or more votes, the region can be divided into any number of districts of roughly equal population. Each
district is then given one representative and
one vote. Such a governing body can be
either elected or appointed, although an
elected body will likely be more accountable
and more consistent over time. Two
examples of this type of organization include
Portland’s Metro (elected) and the Twin
Cities’ Metropolitan Council (appointed).

Regardless of what institutional options are
used, a regional governing body should focus
on reducing fragmentation in planning. A
good starting point is a framework such as
the one developed in the Twin Cities in the
1970s when the Twin Cities Metropolitan
Council was first formed. One of the new
organization’s first tasks was a major study
of where the region stood at that time,
including an inventory of regional assets and
infrastructure, and analysis. The result—*The
Metropolitan Development Investment
Framework*—provided the context for
Council’s regional development policies
through the 1980s.

In the Detroit context, a study and plan of
this sort would provide the background to
determine which public functions—
economic development, land use planning,
libraries, parks, transportation, waste water
collection and treatment, tax-base sharing are
all possibilities—are best suited for inclusion
in a regional organization, whatever its form.

In conclusion, it is unmistakable that the
current system of highly fragmented with
powers divided among many different actors,
none of which have the mandate to exercise
strong oversight functions, is not serving the
region well. There is a clear need to develop
more accountable regional institutions to
address the best interests of the region’s
diverse population.
Endnotes

1 Grouping was accomplished using the K-means clustering procedure in SPSS. All variables were calculated as percentages of the regional average and standardized by the number of standard deviations from the mean so that the effects of variables with very wide variations did not overwhelm the effects of variables with narrower variations. For more on cluster analysis in general, and K-means clustering in particular, see StatSoft, Inc. Electronic Statistics Textbook (Tulsa, OK: StatSoft, 2002) at www.statsoft.com/textbook/stathome.html.


4 Sprawl is measured by \( \frac{(\text{urban land in 2000} / \text{urban land in 1970})}{(\text{population in 2000} / \text{population in 1970})} \). Urban land is defined as land developed at a density greater than one housing unit per four acres, the density used by the census to define urban land at the fringes of metropolitan areas. Fragmentation is measured by the number of local governments per 10,000 residents. This calculation relies on Census data for the six-county Detroit Primary Metropolitan Statistical Area (PMSA), not the ten county area used for most other data. The six counties include Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne.

5 The “predicted sprawl” line shows the simple regression line between the log of the sprawl ratio and the log of the fragmentation measure for the 50 largest metropolitan areas. The log-log relationship is the strongest specification with a simple correlation of .56 (significant at the 99 percent confidence level).


7 www.sierraclub.org/sprawl/report98


9 Researchers have found, for example, that median household incomes of central cities and their suburbs move up and down together in most regions and that the strength of this relationship is increasing. They have also found that the metropolitan areas with the smallest gap between city and suburban incomes had the greatest regional job growth. Another researcher found that in large metropolitan areas income growth in central cities results in income growth and house-value appreciation in the suburbs. See Larry C. Ledeber and William R. Barnes, “All In It Together: Cities, Suburbs and Local Economic Regions” (Washington, D.C.: National League of Cities, 1993); William R. Barnes and Larry C. Ledeber, City Distress, Metropolitan Disparities, and Economic Growth (Washington, D.C.: National League of Cities, 1992); and Richard Voith, “Do Suburbs Need Cities?” Journal of Regional Science 38(8) 445-464, 1998.

10 The comparison Midwestern metropolitan areas include Chicago, Cincinnati, Cleveland, Columbus, Indianapolis, Kansas City, Milwaukee, Pittsburgh and St. Louis. Growth in personal income per capita is corrected for inflation using the consumer price index for all goods and services in Midwestern metropolitan areas.


16 Massey and Denton, American Apartheid, pp. 180-82.


24 For other examples of commuting patterns research, see Robert Cervero’s work, such as “Subcentering and Commuting: Evidence from the San Francisco Bay Area, 1980-1990,” Urban Studies, 35, 7: 1059-1076, 1998; with K.L. Wu.

25 Throughout this section, we refer to both job centers and job clusters collectively as “job centers.”

26 The commuter-sheds were generated by finding the circumference of TAZ’s around the job center with the relevant median travel time and smoothing the contour using Inverse Distance Weighting (IDW) interpolation. IDW estimates values for areas by averaging from surrounding values of point samples, giving greater weight to nearby points. The commuter-shed boundaries were interpolated from TAZ commuting times, using the TAZ centroids as the point samples. IDW was used with the Geostatistical Analyst extension to ESRI’s ArcMap.

23 A traffic analysis zone (TAZ) is a special area delineated by state and/or local transportation officials for tabulating traffic-related data—especially journey-to-work and place-of-work statistics. A TAZ usually consists of one or more census blocks, block groups, or census tracts.

22 Because we are primarily interested in the change in job centers’ characteristics from 1990 to 2000, centers identified with 2000 data but not 1990 data were not included in this analysis.


20 The sensitive natural areas analysis relies on population projections prepared by SEMCOG. Because SEMCOG represents only the 7-county Detroit PMSA, our analysis incorporates only those 7 counties.


18 The 99 percent confidence level). The Gini coefficient measures the difference between the actual distribution of tax base and a perfectly equal distribution. It varies between 0 and 1, taking on a value of 0 if the distribution is perfectly equal (all jurisdictions have the same tax base per household) and 1 if the distribution is perfectly unequal (one jurisdiction with only one household has all of the tax base). Fragmentation is measured by the number of local governments per 10,000 residents. The Detroit metro is defined as the six county PMSA, not the 10 county area.

17 The “predicted inequality” line shows the simple regression line between the log of the Gini coefficient and the log of the fragmentation measure for the 50 largest metropolitan areas. The log-log relationship is the strongest specification with a simple correlation of .34 (significant at the 99 percent confidence level).

16 This scenario was similar to the first except that density was allowed to fluctuate. The estimate of future density began with the change in density from 1991 to 2002 in each municipality. The observed change in density was assumed to continue through 2030 (a “constant shift” scenario), and was extrapolated for each projected time period (2010 to 2030, in five-year intervals). To avoid extreme changes in projected density, the observed change in density from 1991 to 2002 was capped at a high of 125 percent and a low of 75 percent.

15 Under this scenario, urbanized land was calculated by using SEMCOG’s 2030 population projections and assuming that population growth in each municipality would occur at the current average density for that municipality. Urbanized land area was thus equal to projected population growth divided by current density. Urbanized land growth was constrained to ensure that no municipality added more urbanized land is currently available. If the growth in urbanized land was greater than the amount of non-sensitive land, the amount of sensitive land remaining after development was decreased by the remainder.

14 For the purposes of the simulation, municipalities with densities under 1.5 dwelling units per acre (du/ac) were increased by 1.5 du/ac. Municipalities with densities between 1.5 and 3.0 du/ac were increased by 1.0 du/ac. Densities higher than this remained the same.

13 This scenario was similar to the first except that density was allowed to fluctuate. The estimate of future density began with the change in density from 1991 to 2002 in each municipality. The observed change in density was assumed to continue through 2030 (a “constant shift” scenario), and was extrapolated for each projected time period (2010 to 2030, in five-year intervals). To avoid extreme changes in projected density, the observed change in density from 1991 to 2002 was capped at a high of 125 percent and a low of 75 percent.

12 For this scenario, it was assumed that higher densities would be imposed for development between 2010 and 2030. For the purposes of the simulation, municipalities with densities under 1.5 dwelling units per acre (du/ac) were assigned a new density of 3 du/ac. Those with densities between 1.5 and 3.0 du/ac were increased by 1.5 du/ac. Municipalities with densities between 3 and 4.5 were increased to 4.5. Densities higher than this remained the same.

11 For this scenario, a simulated Urban Service Area (USA) was developed by selecting all contiguous municipalities...
with a gross density of at least 0.5 du/ac. Outside the USA, projected growth from 2010 to 2030 was reduced to zero, and that population was instead reassigned to other municipalities proportionally to their available non-sensitive land.


