SESSION VII: SUSTAINABLE DEVELOPMENT OF AGRICULTURE IN METROPOLITAN AREAS

PAPER 2: DEVELOPMENT AND COMPETITION IN RURAL AND METROPOLITAN AREAS IN THE U.S.

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Fifth Joint Conference on
Agriculture, Food, and the Environment

Proceedings of a Conference Sponsored by

University of Minnesota
Center for International Food and Agricultural Policy

Università degli Studi di Padova
Dipartimento Territorio e Sistemi Agro-forestali

Agricultural Development Agency - Veneto Region

University of Perugia

University of Bologna - CNR

Abano Terme - Padova, Italy
June 17-18, 1996

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Development and Competition in Rural and Metropolitan Areas in the U.S.¹

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This paper addresses the growing concerns of local governments and residents about the high costs of urban spillover into adjoining rural areas. From a rural agricultural perspective we focus on the loss of productive agricultural land and open space. From a metropolitan core city perspective the focus shifts to the erosion of the city tax base and its fiscal capacity to pay for the associated high costs of neighborhood decline. From a personal and private perspective, however, urban growth creates new opportunities for residential and commercial development. Many sectors of the local economy share in these opportunities, including young families seeking their first single-family residence at a price they can afford. Given the multiplicity of concerns, the proposed solutions for managing urban metropolitan growth are many, but the outcomes are essentially the same: the converting of rural agricultural areas into suburban and open-country settlement continues unabated.

Overview

The topic of competition and development in metropolitan and rural areas covers a wide and varied range of issues, even when limiting this overview to the U.S. economy. To simplify the charge given to me, I focus on what I believe are the three key economic issues facing transitional agricultural areas of the rural-metropolitan interface. These include, besides the loss of agriculturally productive land in the urban periphery, the attraction of alternative employment opportunities for farm households and the declining importance of farming in creating jobs, income, and investment opportunities. These, in turn, have both positive and negative consequences for the rural agricultural economy and its stakeholders.

Focusing on key issues

The loss of agriculturally-productive land in the urbanizing periphery of metropolitan areas is a continuing concern of metropolitan area planners, land subdividers and realtors, state and local legislative bodies and administrative agencies, and environmentalists. Each is a stakeholder in the transformation of rural agricultural areas into metropolitan area suburbs and open-country settlement. Many current owners of the agriculturally-classified land, on the other hand, view themselves as livestock breeders for nearby residents, producers of horticultural specialties for metropolitan area residents, or hobby farmers, as well as low-profile land speculators and developers with a long-term investment return. For the urban planners, farm-based legislators and agencies, and environmentalists, restraining urban expansion remains a lost cause.

The attraction of alternative employment opportunities is the continuing saga of rural areas everywhere. For the U.S., however, the vast reservoir of potential rural-to-urban migrants in rural areas no longer exists. In fact, many rural areas now experience labor shortages because of expanding new and existing business, including input-suppliers for technology-intensive

¹ Paper presented at the Fifth Joint Conference on Food, Agriculture and the Environment, sponsored by the University of Padova and the University of Minnesota, Abano Terme, Italy, June 17-19, 1996.
manufacturers in the metropolitan areas. In Minnesota, the most intense competition for labor occurs where Minnesota’s manufacturing and dairying areas overlap.

The declining importance of farming locally is manifested in series after series of monthly employment figures showing fewer farm and more nonfarm jobs in most localities—a result of applying both traditional and brand new technologies to the agricultural enterprise and recently accelerated by renewed efforts in land conservation and preservation. Agriculture now shares more and more of the economic base with manufacturing in a growing number of rural areas. In fact, non-metropolitan labor markets in Minnesota now have a larger share of the basic workforce in manufacturing than in agriculture.

These issues bring along a host of concerns about changing rural land values and the methods of their appraisal and sale. Local regulatory measures, like zoning and building codes, as well as distance from a metropolitan core area, affect land values in the urbanizing periphery, even more than their agricultural productivity. Because of the extreme difficulty of accurately anticipating the political and economic changes and weather conditions affecting local land values, property managers reduce their risks and uncertainties by diversifying their rural land portfolios. The individual farmer, of course, lacks this option.

**Building and using a region’s social capital**

Finding common ground in managing urban metropolitan growth undoubtedly is difficult. Its marketplace participants, however, share at least one common value in their propinquity or proximity to one another. Proximity, as many studies show, is the essential condition for the existence of a central city downtown district, a viable and functioning local labor market, or place of gathering for business or pleasure (Hutton and Ley, 1987; Saxenian, 1994). Uncontrolled urban sprawl erodes proximity-based values. Residents of the outlying areas compensate for the loss of proximity by extra-ordinary increases in the frequency and duration of trips for shopping, schooling, recreating, caring for the health and safety of self and family, and especially the daily journeying to work. All this generates corresponding pressures for more and bigger access roads with more congestion and pollution that adds to the indirect and, oftentimes, hidden costs of urbanization.

Participants in the urban marketplace also share in the consequences of having, or not having, a strong sense of community. Compare northern Italy with southern Italy, as Robert Putnam does in his book, *Making democracy work: Civic traditions in modern Italy*. Propinquity clearly has had something to do with the civic traditions in modern Italy, but it is more than mere proximity of one leading family to another in Padova, Venice, or Milan. Success in dealing with problems of development and competition in the urbanizing periphery of a metropolitan region depends on the region’s social capital—its traditions in civic engagement, like the organizing of successful consumer and producer cooperatives, forward-looking labor unions, and other civic ventures, and its norms of reciprocity, both specific and generalized. Robert Putnam refers to the work of Ostrom in *Governing the Commons* when noting that communities in which the norm of generalized reciprocity is followed “can more efficiently restrain individual opportunism and resolve problems of collective action” (Putnam, 1993).

Closely associated with the sense of community is equity. The lack of equity in paying for the costs of the expanding urban periphery, in large measure, sustains it. New residents are attracted
to the urban periphery because of its relatively low land costs, low property taxes, and low crime. The central cities are left with the financing of high cost services from an eroding property tax base. Even if metropolitan area residents were willing to pay the full-cost, i.e., direct costs of providing the services plus the “spillover” costs borne by others, of developing the urban periphery, the perceived benefits would outweigh the perceived costs, given the understandable difficulties in billing the new resident for these costs. In short, achieving equity in the financing of metropolitan area growth is a problem of associating the long-term benefits of an expanding urban periphery with its long-term costs. Similarly, achieving equity in the capture of the capital gains from converting agricultural land into urban uses remains an illusive goal, given the disassociation between the limited number of beneficiaries and the much larger number of prospective homeowners paying higher prices because of a restricted supply of land for residential development.

The plan of approach to the study of competition and development in metropolitan and rural areas is to address the three key issues, but also to introduce some guiding principals and factual evidence for assessing the local economic consequences of converting agriculturally-productive land into urban uses. We address the topic by starting with the regional setting. We continue with a brief look at the forces of development and competition and their public policy implications.

**Regional Setting**

The extended metropolitan core area is the appropriate regional setting for the study of competition and development of the rural-urban interface. We approach this task by identifying critical rural-metropolitan linkages, delineating the economic region, and, finally, measuring its internal linkages.

**Rural-metropolitan linkages**

Infrastructure is the basic facilities and services of a community that serves to link rural and metropolitan areas into a functional urban-centered economic community. This includes the transportation and communication systems, power plants, waterworks, waste disposal, police and fire protection systems, schools, prisons, and post offices. It links the rural community to the metropolitan core area of its region. Its critically important role demands a host of supporting institutions—economic, social and governmental, among which state and local governments play an increasingly important role. The physical infrastructure of an area is a necessary, but not a sufficient, condition for an area’s economic growth and viability. Thus, by starting with a region’s infrastructure, we direct attention to the basic, export-producing activities of a region that generate the underlying demand for the infrastructure and that account for the changing patterns of land use in the periphery of an expanding metropolitan area. We also direct attention to the rural-metropolitan linkages as represented by both the commuting patterns of the metropolitan area workforce and the input purchases and output markets of metropolitan area businesses.

Much of the building of rural and metropolitan area infrastructure is local. Nonetheless, the federal government has influenced its development in several ways, both nationally and locally. The influence of national defense immediately after World War II brought together the necessary support for a massive unified effort in transportation infrastructure investment—the building of
the Interstate Highway System. This was a long-term program that affected the economic well-being of population and industry in both rural and urban areas. At the same time, several large companies manufacturing automobiles and tires entered into a successful campaign to destroy the municipal trolley systems and replace them with the private, individually-owned automobile. Thus, the combination of the federal government subsidizing interstate trucking and the loosely-organized consortium of auto-related industries ended the city-building influence of fixed-rail transportation. Add to all this the deregulation of the railroad industry that came too late to allow the industry to acquire attitudes and competencies for coping with the new competitive forces affecting both short-distance and long-distance rail transportation.

Establishment of the Interstate Highway System and the decline of city-to-city rail transportation was followed by a second potentially unifying influence in transportation infrastructure development—the work of the Federal Aeronautics Administration in planning for and implementing a system of air transportation nodes, centered on metropolitan core areas remarkably similar in their economic structures. This effort partially re-instituted what the railroads had accomplished earlier—a central role for the larger cities as the major distribution and producer services centers of the U.S. economy. Again, countervailing policies subverted the density-increasing potential of concentrated urban settlement by the 90-percent federal financing of approved local urban infrastructure development, including highway and sewer and water systems, and the expensing of interest payments on home mortgage loans. This skewed residential development in the metropolitan area to the low-density periphery of its daily commuting area, thus greatly increasing the overall costs of metropolitan area governance.

We refer to the commuting area—the daily journey to work of an urban-centered workforce—as the labor market area (LMA). It is the primary building block in a "bottom-up" approach to regional economic organization, based on the principal of proximity in its delineation and definition. New research findings confirm earlier insights that the most strategic relationships among firms in network systems serving global markets are often local because of the importance of timeliness and face-to-face communication for rapid product development (Saxenian, 1994; Hutton and Ley, 1987; Ley and Hutton, 1987). State and local infrastructure investment thus provides the immediate environment for successful, globally-competitive, export-producing enterprise to support both the rural community and businesses in the metropolitan core area that seek access to the low-cost suppliers in the rural areas.

Figure 1 summarizes the key concepts introduced for the study of regional infrastructure investment within this framework. The economic activities that occur within a region account for a corresponding differentiation of their role in regional economic organization. Concentration of high-order producer services and infrastructure—communications, transportation, energy systems, along with the region’s major educational and research institutions and technology-intensive manufacturing, characterize the economy of the metropolitan core area—usually the largest and most densely populated labor market area in its economic region. Beyond the core area lie other LMAs, including other highly urbanized metropolitan LMAs, non-metropolitan LMAs serving as multi-county shopping and service centers, and the most sparsely populated LMAs of small towns and open-country settlement. Many of the rural areas are characterized by a generally declining population and workforce that no longer produce the region’s primary exports to domestic and international markets. Thus, the core labor market area and other metropolitan
labor market areas of this region account for much of the region’s recent economic growth. Both metropolitan and rural areas must eventually prosper, however, in order for sustainable regional growth and development to occur.

Figure 1. Regional economic organization for state and local infrastructure investment.

An excess of local jobs over resident job holders identifies the central place of a LMA. This definition of a central place focuses on the critical resource of most regional economies—its workers of many trades and skills, supporting a diverse and dynamic local labor market (Fox, 1994; Saxenian, 1995). The in-commuting of non-resident job holders overcomes the deficit in resident job holders for the central places. This accounts for the varying concentrations of economic activity, depending on type and size of the LMAs and their location relative to the metropolitan core area (Maki and Reynolds, 1994).

**Delineation of metropolitan core areas and regions**

Figure 2 illustrates the use of individual counties as building blocks for the labor market areas by focusing on the Minneapolis-St. Paul air node region. Of the 281 counties in the Minneapolis-St. Paul Region, based on the 1980 commuting area delineations (Tolbert and Killian, 1987), 32 are included in 13 Metropolitan Statistical Areas (MSAs). Thirteen of the counties are in the Minneapolis-St. Paul MSA and part, also, of the 16-county Minneapolis-St. Paul LMA. An additional 94 non-MSA counties are part of the remaining 12 LMAs (i.e., the secondary core areas) that include the MSA counties outside the metropolitan core area. Even a dominantly rural region, like Minneapolis-St Paul with 155 counties in 13 entirely rural LMAs, forms a highly integrated trading region with much internalization of trade between metropolitan and non-metropolitan areas. The metropolitan core area is of critical importance to the rural areas with an expanding industrial base because of its market and non-market linkages to the core area producer services and transportation infrastructure (Glasmeier, 1993; Maki and Reynolds, 1994). Also important are the secondary core areas. These include the endogenous growth centers, characterized by their increasingly diverse local labor markets (Hansen, 1993). The commuting areas of both the primary and the secondary core areas also serve as the functional economic community for solving areawide problems by strengthening and extending the “networks of civic
engagement" that facilitate the flows of information about technological developments, employment and entrepreneurial opportunities, and related factors affecting the competitive position of export-producing businesses in their respective markets (Putnam, 1993).

The regional database for assessing the rural-metropolitan linkages includes a common 1990 data set of industry and commodity exports and imports, as well as industry and commodity sales and industry employment and value added, for all U.S. counties and for each one of the more than 500 producing sectors possible in a single county. Supplemental data series also show the sharp gradient in land values per acre or per square foot as land values are more commonly measured in the central city. These values range from less than five cents per square foot for strictly agricultural land in the urban periphery to 50 cents per square foot for five-acre residential lots, $5 per square foot for prime residential lots, and $50 per square foot for commercial parcels in established metropolitan area suburbs.

**Forces of Development and Competition**

The competition for land and space in an economic region differs from place to place because of proximity to a metropolitan core area and the development of its location-dependent activities. These activities account for the changing place-to-place geography of production in a region. Their type and intensity are among the high-order determinants of the economic viability of any
regional agri-industrial system. Findings from the University of Minnesota Impact Analysis for Planning (IMPLAN) regional database and modeling system illustrate the meaning and use of the several measures of interarea and interregional trade among labor market.

**Industry and product specialization**

High-order, high-margin services and technology-intensive manufacturing, for example, are increasingly important parts of the emerging industrial complexes in metropolitan areas. They concentrate in these areas because of the active and diverse local labor markets. Commodity-producing, low-margin industry, on the other hand, concentrate in rural areas because of low site costs as well as the local availability of highly productive workers. The urban periphery, while the place of business for largely commodity-producing industries, also has an expanding services-producing sector because of its growing commuter population that initially may have replaced farming as the local economic base.

A leading measure of the size and viability of an established local economic base is the value of its exports, or outshipments, to market destination outside its own labor market area. Another measure is its propensity to import goods and services from sources outside the area. The primary difficulty in the use of these two measures is the lack of any accurate monitoring of commodity or product flows from one area or region to another. We have, however, indirect measures of these two indicators of actual shipments from a variety of data sources, including the U.S. Censuses of Transportation that show the gross out-shipments and in-shipments of industries in each state.\(^2\) The University of Minnesota IMPLAN system includes estimates regional purchases coefficients, that is, the proportion of specific commodity purchased locally, for all or any group of industries and localities. Once we have the estimates of gross out-shipments using the indirect measures, we can then estimate gross in-shipments, given the total production in the area or region. These estimates provide measures of rural-urban interdependencies in both employment and industry sales and purchases that account for the more rapid growth of the rural areas with active linkages to the metropolitan core area.

Each industry produces one or more commodities. Use of commodity, rather than industry, measures of exports and imports would reveal the balance of trade among individual commodity groups for each of the combined LMAs. Measures of net commodity exports, for example, would show the excess of individual commodities produced within the area over their total imports. They would show the purchases of commodity imports by individual producing and consuming sectors and the extent to which each sector contributes to any trade deficits. The

\(^2\) We validate the indirect measures of gross exports and gross imports with a variety of auxiliary measures of local economic activity and structure. First, product specialization and localization measures show the relative importance of the product in the region and the nation and its geographic distribution within a region. Second, the central place and its local labor market measures link the geographic localization of production within a region or area to its industry structure. Third, regional advantage measures show the propensities to trade, both export and import, of the individual, geographically-differentiated regional industries. Study of the economic base of rural and metropolitan areas thus reveals strong production and trade linkages between the two types of areas with the economic vitality of the one being in large measure dependent on the economic vitality of the other.
proportion of net exports accounted for by each locally-produced commodity is, also, an alternative measure of an area's economic base.\(^3\)

Table 1 presents estimates of gross out-shipments, or exports, of local industry production for the core area and six clusters of LMAs in the Minneapolis-St. Paul region, including parts of North and South Dakota, northeastern Nebraska, the northerly counties of Iowa and Wisconsin, the Upper Peninsula of Michigan, and all counties in Minnesota. Inclusion of the core area of 16 counties provides comparison of its external trade with the external trade of the more rural areas of the region. Even with high levels of industry aggregation, subregional differences in export composition emerge in the same industry comparisons.

Table 1. Total exports of specified industry output, by subregion, Minneapolis-St Paul Economic Region, 1991

<table>
<thead>
<tr>
<th>Industry</th>
<th>Core Area</th>
<th>East</th>
<th>Central</th>
<th>West</th>
<th>East</th>
<th>Central</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>898</td>
<td>648</td>
<td>1,071</td>
<td>1,902</td>
<td>1,213</td>
<td>1,986</td>
<td>2,436</td>
</tr>
<tr>
<td>Agr. services, for., fish</td>
<td>130</td>
<td>76</td>
<td>35</td>
<td>16</td>
<td>129</td>
<td>61</td>
<td>67</td>
</tr>
<tr>
<td>Mining</td>
<td>126</td>
<td>2,223</td>
<td>39</td>
<td>381</td>
<td>80</td>
<td>197</td>
<td>101</td>
</tr>
<tr>
<td>Construction</td>
<td>228</td>
<td>21</td>
<td>55</td>
<td>53</td>
<td>47</td>
<td>59</td>
<td>138</td>
</tr>
<tr>
<td>Manufacturing, total</td>
<td>27,596</td>
<td>4,555</td>
<td>2,621</td>
<td>2,349</td>
<td>7,967</td>
<td>11,926</td>
<td>10,950</td>
</tr>
<tr>
<td>Trans. comm., utilities</td>
<td>2,088</td>
<td>473</td>
<td>447</td>
<td>601</td>
<td>164</td>
<td>141</td>
<td>357</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>2,090</td>
<td>86</td>
<td>71</td>
<td>210</td>
<td>167</td>
<td>226</td>
<td>282</td>
</tr>
<tr>
<td>Retail trade</td>
<td>743</td>
<td>91</td>
<td>151</td>
<td>78</td>
<td>124</td>
<td>37</td>
<td>157</td>
</tr>
<tr>
<td>Fin., ins., real estate</td>
<td>2,057</td>
<td>161</td>
<td>233</td>
<td>97</td>
<td>93</td>
<td>333</td>
<td>387</td>
</tr>
<tr>
<td>Private services</td>
<td>3,245</td>
<td>382</td>
<td>325</td>
<td>530</td>
<td>433</td>
<td>1,159</td>
<td>1,007</td>
</tr>
<tr>
<td>Government</td>
<td>108</td>
<td>5</td>
<td>24</td>
<td>33</td>
<td>3</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>39,309</td>
<td>8,721</td>
<td>5,071</td>
<td>6,250</td>
<td>10,421</td>
<td>16,130</td>
<td>15,889</td>
</tr>
</tbody>
</table>

Source: University of Minnesota IMPLAN System

1 North refers to the 74 counties in nine labor market areas (from Marquette westward to Bismarck) north of Minneapolis-St. Paul, while South refers to the remaining 191 counties in 17 LMAs, largely in South Dakota, southern Minnesota, and central Wisconsin, including the Iron Mountain LMA. The 26 LMAs aggregate to the following: Northeast combines Duluth-Superior, Ashland, and Marquette; North Central combines Bemidji, Alexandria, and St. Cloud; Northwest combines Bismarck, Grand Forks, and Fargo-Moorhead; South East combines Eau Claire, Wausau, Winona, LaCrosse, Rochester, and Waterloo; South Central combines Willmar, Mankato, Worthington, Spencer, and Mankato; and South West combines Aberdeen, Sioux Falls, Sioux City, and Norfolk.

The net exports of each area, that is, gross industry out-shipments less gross industry in-shipments, show even greater area-to-area differences. Construction and the services-producing industry groups, for example, consistently show net in-shipments for the LMA clusters outside the core area. Construction, of course, is the most highly import-dependent industry group. However, the aggregation of many individual industries into the broader categories, like manufacturing, obscures the sharply contrasting composition of exports of the core area and its

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\(^3\) Applying the share of total employment engaged in producing the exports of each industry to the industry's total employment yields a measure of the industry's contribution to the local economic base. Using this measure, manufacturing accounts for 50 percent or more of the economic base of all but the north central and the north west LMAs of Minnesota and North Dakota. Agriculture is dominant in the north west LMAs, accounting for 46 percent of the subregion economic base. Exports thus become the means to acquire an-flow of dollars into the area for purchasing, in large measure from its own metropolitan core area, the many imported goods and services sought by local producers and consumers.
surrounding LMAs. The additional data would more clearly identify opportunities for the internalization of interarea trade.

The dominant basic industry groups are also the dominant import-dependent industry groups, except for construction. Export growth means import growth because of the corresponding increases in demand for the imported intermediate production inputs (Jacobs, 1984). As an area grows and diversifies, however, import replacement occurs for both intermediate inputs and final purchases. Imported finished goods and services dominate total imports in the periphery of an economic region, while imported intermediate goods and services are dominant in its core area. Again, the import dependencies of the core area contrast sharply with those of the periphery, which, of course, is a measure of the opportunities for internalizing the export trade of individual LMAs. Dominantly agricultural areas share increasingly in the internalization of exports and imports within the larger economic region.

**Transportation access to work place and consumer services**

The construction of important local highway linkages between rural communities and their metropolitan core areas follows the urbanization of metropolitan regions—a process accompanied by the gradual expansion of the urban periphery, the conversion of rural into urban land uses, and the disassociation of place of work and place of residence for an increasing proportion of the metropolitan area population. The devising of roadway development options at this stage of a metropolitan area’s outward expansion is a process of finding and implementing the one option of several that best serves the interests of both local residents and the larger economic community, but acknowledging the concerns of property owners adversely affected by one or more of these options. At this stage, the people are in place, they have jobs, they generate above-average levels of disposable income, and they support a growing number of local business, thus reducing their dependency and their neighbor’s dependency on more distant shopping centers and places of work.

**Reconciling development options**

The reconciling of development options in this presentation comes from a recent study of roadway development options for an approximately 20-mile segment of a principal highway corridor in a newly-urbanized part of the Minnesota-St. Paul labor market area that borders the metropolitan urban services area. This summary is based on two surveys—one of 600 resident households (representing a resident household population of nearly 20,000), the other of 200 local businesses (representing a resident business population of nearly 2,000)—provide the factual context for assessing various roadway development proposals affecting the economic and social well-being of local residents. The survey findings address the local economic conditions that ultimately determine the overall benefits and costs of roadway development in which individual local residents share in varying degree. They focus on the intermediate level of economic entities—not the individual property owners in the Corridor, nor the entire multi-county metropolitan area, but, rather, the players in the local economy represented by their business and household activities and participants. The underlying intent of this presentation is to show the local conditions and the related decisions that eventually result in further increases in commuter traffic and residential development in the urban fringe.
The percentage distribution of the focus area (i.e., Corridor) workforce in Table 2 illustrates the different sets of relationships between place of residence and place of work. With 47.5 percent of the Corridor resident workforce, for example, the East Corridor workforce accounts for largest share of the total commuter workforce. The Central Corridor workforce accounts for 27.4 percent of the total workforce, but it has the largest share of total jobs in the Corridor and it also accounts for the largest deficit of workers from Corridor localities. The Corridor workforce is split almost evenly between Corridor workplaces and workplaces in localities outside the Corridor. The resident workforce remaining in its originating Corridor Subarea is smaller in total number than the total jobs in its subarea. The separation of place of residence and place of work illustrated in this example occurs also for the originating areas of the jobholders commuting to jobs in Corridor localities. The commuting workforce in wage and salary employment (i.e., having a "paying job") generally has the higher earnings relative to the local workforce.

Table 2. Comparing specified resident survey workforce with business survey jobs in specified areas, TH 12 Corridor, January 1995

<table>
<thead>
<tr>
<th>Subarea</th>
<th>Worker Destinations</th>
<th>BusSurvey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total (pct.)</td>
<td>Corridor (pct.)</td>
</tr>
<tr>
<td>East</td>
<td>47.5 (pct.)</td>
<td>43.4 (pct.)</td>
</tr>
<tr>
<td>Central</td>
<td>27.4 (pct.)</td>
<td>29.6 (pct.)</td>
</tr>
<tr>
<td>West</td>
<td>24.9 (pct.)</td>
<td>26.3 (pct.)</td>
</tr>
<tr>
<td>Survey Total</td>
<td>100.0 (pct.)</td>
<td>100.0 (pct.)</td>
</tr>
</tbody>
</table>

Source: Minnesota Center for Survey Research, TH 12 Corridor Surveys, January 1995

Table 3 summarizes the baseline tabulations of trips to place of work, shopping, entertainment, and personal care. We derive the trips to place of work from the Resident Survey estimates of trips per employed person. We convert shopping and personal care trips from a weekly basis to a daily basis, assuming a six-day week for this purpose. We reduce non-work trips by one-third to account for combined trips. The estimated daily trips total 46.9 thousand, with 22.8 thousand originating from the East Corridor localities.

Table 3. Total baseline daily round trips for work, shopping and personal care of specified locality residents, TH 12 Corridor, January 1995

<table>
<thead>
<tr>
<th>Township</th>
<th>Work Trips</th>
<th>Shopping and Personal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SelfEm (thou.)</td>
<td>W&amp;S (thou.)</td>
</tr>
<tr>
<td>Total</td>
<td>2.8</td>
<td>26.9</td>
</tr>
<tr>
<td>East</td>
<td>1.2</td>
<td>13.0</td>
</tr>
<tr>
<td>Central</td>
<td>0.9</td>
<td>7.0</td>
</tr>
<tr>
<td>West</td>
<td>0.6</td>
<td>6.9</td>
</tr>
</tbody>
</table>

Source: Minnesota Survey Research Center, 1995 TH 12 Corridor Resident Survey

The number of trips adds to the difficulties of travel by increasing the time of travel on local and regional roadways. Trip frequency is thus only part of the problem in affecting access to work, shopping, personal care, recreation, and entertainment.

Assessing economic effects

Important in the assessing the economic effects of roadway development options on these activities is the buying power of local residents, including its locality distribution as well as its magnitude. The findings show, for example, that the more distant household, those in the
urbanizing transitional rural areas, have a higher proportion of households with less than $35,000 total income and fewer with more than $75,000 total income. The urban-to-rural personal income gradient reveals important consequences of the personal and environmental attributes of proximity to the metropolitan core area. An increasing awareness of the importance of job access is coupled with increasing difficulties in improving access to most distant job seekers. With high household incomes, driving alone is the common transport mode in the daily journey to work for nearly 88 percent of the employed workforce in the Corridor localities. Only eight percent depend on a car (or van) pool.

Duration, distance, and frequency of individual round trips determine the total volume of trips generated by the resident households in the Corridor Study Area. These in turn vary by household, depending on its employment status, total income and position in the family cycle. Ultimately, the nature and location of employment of the individual household members accounts for the source of traffic-generating activity.

While the elements of propinquity, equity, and community may undergird the successful managing of metropolitan growth, the conversion of rural agricultural land to urban uses may occur, also, in ways less environmentally and economically damaging than before. These measures would be accompanied by community efforts to increase population densities, like enriching the downtown cultural and recreational amenities, supporting community-based childcare and protective services, funding multi-purpose neighborhood schools and social centers, and building new, readily-accessible rapid transit facilities serving both the downtown and the neighborhoods. In addition, future land values may become more market-driven as central governments relax various regulatory measures and commercial property managers build more diversified portfolios, consolidating small farms into larger land parcels that can be re-partitioned later for sale to the highest bidder or kept for further capital gains.

**What This Means for Managing Metropolitan Growth**

We initially identified several outcomes of competition and development in rural and metropolitan areas, namely, the loss of agriculturally-productive land in the urbanizing periphery of metropolitan areas, the attraction of alternative employment opportunities in rural areas everywhere, and the declining importance of farming locally. These outcomes we attribute in part to the widespread support for subsidizing residential construction and related public infrastructure in the expanding urban periphery. We note that past efforts in containing the resulting “urban sprawl” have failed. We now re-examine the structure and means of metropolitan governance and the importance and use of its social capital, along with the role of infrastructure development and services delivery, in containing urban growth. We address, also, the continuing conflict between environmental protection and individual property rights.

**Metropolitan governance—spatial propinquity, equity, community**

Among past efforts to contain economically and environmentally damaging urban expansion are various legislatively-sanctioned measures to preserve open space outside the currently urbanized area, including private-public partnerships in the building of “greenbelt” cities, municipal land banking and zoning for future airport expansion and relocation, and preferential tax treatment for maintaining adjoining land in “agricultural” uses, as defined in the enabling legislation. This includes, also, the denial of sewer and water system services outside a designated “municipal
urban services area.” None of these measures have withstood the erosion of time and the countervailing forces to extend the periphery of urbanization, either through the marketplace or the courts.

Effective metropolitan governance starts with the sharing of a common space for the conduct of uncommon activities. The high concentration of businesses engaged in headquarters and strategic management functions distinguishes the core area’s downtown district, for example, while its daily commuting area exceeds that of any other central place in the region. It also includes most of the extended region’s highest income households. Our study findings show that commuter residents compensate for their loss of spatial propinquity through extra-ordinary increases in the frequency and duration of trips for shopping, schooling, recreating, caring for the health and safety of self and family, and especially the daily journeying to work. New residents were originally attracted to the urban periphery because of its low land costs, low property taxes, and low crime, while the central city was left with the financing of high cost services from an eroding property tax base and a highly inequitable distribution of the benefits and burdens of metropolitan growth. Achieving equity in the financing of metropolitan area growth, however, remains as yet a continuing challenge rather than an accomplished fact, particularly in associating the benefits with the burdens of an expanding urban periphery. Effective metropolitan governance depends, also, on an expanding sense of community with widely accepted norms of reciprocity in civic engagement (Putnam, 1993, p. 152-162).

Enactment of the Metropolitan Council Act by the 1967 Minnesota State Legislature, and the organizing of the Metropolitan Council, marked a turning point in the management of urban growth in the seven-county Twin Cities metropolitan area. In the opinion of the state attorney general, however, the council was not a state agency, although each of the 15 members was appointed by the governor. It was a step above local government, but a step below state government, with some characteristics from each (Vance, 1977, p. 68). The council was charged with the responsibility of planning and coordinating activity required for the sound development of the metropolitan area. The council was to prepare and adopt a comprehensive development guide for the area and prepare special studies and reports on air and water pollution, parks and open space, sewage disposal, taxation, assessment practices, storm drainage, and consolidation of local services” (Vance, 1977, p. 72). Its coordinating efforts were to be accomplished by appointing from its membership persons to serve on each of the metropolitan and regional agencies and by reviewing metropolitan agency plans with the power to suspend if not consistent with the Metropolitan Development Guide. It included also the reviewing municipal plans, without power to suspend, and the reviewing federal loans and grants to governmental units, boards, and commissions. At that time, the seven counties represented the commuting area of the two downtown business districts. The powers of the Metropolitan Council are still confined to its original seven counties. By 1980, however, the commuting area covered 16 counties, with five more added by 1990. We expect this area to expand even more as the state’s road-building agency continues to improve its access roads from the urbanized periphery to the central cities.

**Infrastructure development and service delivery**

Much of the current transportation infrastructure is based on farm-to-market roads and farm commodity shipments by truck, rail and barge. Yet, these shipments account for only a small
part of the total value of all commodity traffic, and even a smaller part of all transportation expenditures. Simple market tests of value added by each transportation system investment clearly deserve consideration in setting system priorities. The alternative is a rapid rise in total transportation costs--direct and indirect, and especially those hidden in the escalation of personal travel expenditures of households and businesses that add to the total costs of exports produced in the metropolitan core area and of “doing business” in the area in competition with businesses elsewhere. For example, transportation investments in the periphery of the urbanized metropolitan area invariably subsidize urban sprawl at the expense of central cities and the oldest suburbs. This increases congestion and environmental pollution faster than it is reduced by energy-efficient, pollution-free automobiles, and amounts to further subsidy of fast-track access routes from exurbia to city center, which, in turn, subverts the critical role of core areas as engines of economic growth by burdening them with high governmental costs supported by a shrinking tax base.

In the mid-1970s, the Twin Cities Metropolitan Council put into effect its Metropolitan Development and Investment Framework to manage fringe-area growth within its seven-county jurisdiction. Its plan constituted a “a contiguous growth development strategy focusing on managing fringe area growth” by confining metropolitan sewer, highway, and transit service to the Metropolitan Urban Service Area (MUSA). Its chief benefits were “cost-efficient investment in public infrastructure and long-term preservation of agricultural areas.” Overall, the plan appeared to work with 93 percent of the area’s development in the 1980s occurring within the area intended for it. The area’s growth in single-family households surged in the late 1980s and 1990s, however, particularly on the rural-urban interface. The Council re-evaluated its investment framework in the mid-1990s, replacing it with its Regional Blueprint (Appendix). This plan established five goals for the area, including a “strengthened sense of community.” Other goals are “economic growth and job creation, “reinvestment in distressed areas,” “preservation of the environment,” and “sound regional infrastructure investment.” The Council is now working on the setting of priorities among the goals and a physical development map for the long-term development and redevelopment of its area.

The current MUSA line is under growing pressure from area builders with the strong likelihood that its extension would be supported by the next state legislature as well as the courts of law. The Council lacks access to effective market incentives that would help maintain the current MUSA line, given the increasing demand for residential space, coupled with rising land costs and other “push factors” operating from the two central cities and the first-ring suburbs. The likelihood of adopting various non-market incentives for containing urban sprawl, either directly (e.g., by reducing residential mortgage interest payments and local infrastructure subsidies) or indirectly (e.g., by improving schools, reducing crime, making streets safe, and rebuilding central city neighborhoods) are nil, at least in the next several years when the pressures for extending the MUSA line reach their crisis stage.

The current plans to widen and extend access roads to the downtown district from rural areas beyond the MUSA line, when mapped, however, seem to arbitrarily end at the boundary of the seven-county metropolitan area. We must remember, however, that the state transportation department has its own statewide roadway development plans for the seven-county area that extend beyond the seven counties. The Council’s roadway development plans thus account for
only part of the roadway development plans covering the entire metropolitan commuting area. This is another manifestation of the Council’s difficulties in managing urban growth, given its present structure and responsibilities.

**Environmental protection and property rights**

Alternative approaches to encourage residential development within the MUSA line include the various measures focusing on the environment and the adverse effects of commuter traffic and urban sprawl on air and water quality in the fringe localities. Such measures depend, however, on the availability of and access to rapid public transit, largely in lieu of the private automobile for work-related and entertainment-related trips. Shopping by computer, coupled with low-cost delivery of groceries and other frequently-purchased items could reduce the current high dependency on the private automobile. However, the measurement of these changes and the related costs and benefits and the assessment of their incidence among households and localities remain among the more challenging tasks of our times (Bromley, 1989, p. 37-80).

The transfer of property rights from agriculture to other land uses is rampant among present and prospective land subdividers in the rural-urban periphery, as the business survey findings cited earlier show. Professor Karen Polenske, regional economist and urban planner at MIT, believes that the introduction of property rights and geographical space into the formulation of strategy of regional development is essential for policy makers to effectively deal with the related issues of power and control in the economic development process (1994, p. 18). She argues that the issues relating to property rights need systematic study. The distributitional effects of changing property rights, the institutional changes they precipitate, and the consequences of these changes for the societal problems addressed by the area and regional development strategies are increasingly important to people and regions and, in Polenske’s view, should be incorporated into these strategies. Geographic space and proximity to various producer services and markets also affect the exercise of the power and control emanating from certain property rights and should be included in the formulation of any new development strategy.

**Organization structure**

The Metropolitan Council falls short of the definition of metropolitan government, that is, a general purpose local government with “all the powers of a municipality under applicable state law” (Rusk, 1993, p. 89). Even with a re-definition of its powers, the Metropolitan Council could not address the problems of the rural-urban interface unless it also has the flexibility of stretching its boundaries with the spatial-economic expansion of the functional metropolitan community. The critically important issues of metropolitan governance thus originate (or terminate), in large measure, outside the Council’s legislatively-sanctioned territorial jurisdiction. In addition, the Council lacks legitimacy as long as it remains an appointed body. If its members were elected, however, it would face the task of reconciling its powers and responsibilities with those of municipal, county, and state governments.

**Summary and Conclusions**

We identified three key economic issues facing transitional rural agricultural areas: the loss of agriculturally productive land in the urban periphery; the attraction of alternative employment opportunities for farm households; and the declining importance of farming locally in creating
jobs, income, and investment opportunities. We find, however, that many current owners of the agricultural land no longer view themselves as commodity producers, but as specialty producers or even low-profile land speculators and developers. The real issue thus becomes one of "managing" the urban-rural interface in the "common interest." Similarly, the real issue in the rural-urban competition for labor is one of integrating the transitional rural agricultural area into the new economy that extends well beyond the metropolitan core area. The third real issue is agriculture's long-term viability and its successful integration into the daily life of the expanding economic community of which it is already an integral part.

We know too well the consequences of the changing economic conditions: Rural depopulation, central city implosion, and residential relocation to the expanding urban periphery where property taxes are low, streets are safe or at least perceived so, schools are good, and access is virtually free to many rural amenities and high quality-of-life attractions. Add to all this the "push factor" of land values being 100 times or more greater in the central city than its periphery on one hand and on the other the mounting costs, for those left behind, of paying for a growing inventory of vacant land that is inaccessible or unavailable for new residential use.

The plan of approach to the study of competition and development in metropolitan and rural areas is to address the three key issues, but also to introduce some guiding principals and factual evidence for assessing the local economic consequences of converting agriculturally-productive land into urban uses. We address the topic by starting with the regional setting. We continue with a brief look at the forces of development and competition and their public policy implications. We base the findings and conclusions, in part, on two unique sets of data for this study--the University of Minnesota IMPLAN regional modeling system and a Minnesota Department of Transportation study of the socioeconomic impacts of roadway development in the rural-urban interface of the Twin Cities metropolitan area.

The study findings support the introductory statement that given the multiplicity of concerns, the proposed solutions for managing urban metropolitan growth are many, but the outcomes are essentially the same: The converting of rural agricultural areas into suburban and open-country settlement is likely to continue. New forms and strategies of regional governance that can more efficiently and effectively restrain individual opportunism and resolve problems of collective action are emerging in the U.S. and Italy, but they face formidable difficulties in their nurture in each of the cited policy domains, whether metropolitan governance, infrastructure development and service delivery, environmental protection and property rights, or organization structure. New market-driven organizational structures may emerge that combine the locational diversity of their land holdings with the consolidation of small and abandoned farms into larger land units, thus reducing the risks and uncertainties of holding strictly agricultural lands in their portfolios. Hopefully, what remains from this sort of analysis and assessment is a realistic understanding of the controlling market forces affecting the directions in which the agri-industrial sector is likely to evolve in the various economic regions of the U.S. and the opportunities it surfaces for ameliorating the adverse effects of urban fringe development.
Bibliography


Appendix: A Regional Strategy for Guiding Metropolitan Area Growth

The Twin Cities Metropolitan Council’s Regional Blueprint identifies a range of issues posed by the “challenge of guiding growth.” These issues include (Metropolitan Council, 1994, pp. 44-45):

- Coordinating the timing, location and capacity of regional facilities, like wastewater treatment facilities and highways.
- Monitoring development trends within urban service boundary area and verifying its land estimates with local communities.
- Linking transit to high-density development to create pedestrian-friendly environments.
- Coordinating planning with better communication between adjacent communities and other levels of government to solve regional and local issues.
- Establishing priorities for targeting public investments, whether in growing communities or older urban areas.
- Addressing the determinants and sources of urban sprawl into rural areas that creates demands for costly services, thus jeopardizing the rural life style that attracted many people to the area in the first place, while also converting even more prime agricultural land into low-density residential development.
* Evaluating proposed special one-of-a-kind facilities, like those for the Metrodome and Mall of America to determine whether they are built in the most appropriate locations and at the right scale for the region.

* Managing debt burden for regional facilities within reasonable bounds.

The Metropolitan Council adopted a series of policy steps for implementing its regional strategy. These specify actions of the Council to “ensure that regional services and facilities under its jurisdictions are provided cost-effectively to support development and revitalization in the region” (Metropolitan Council, 1994, p. 46). Thus the Council agrees to:

* Provide regional services for urban-scale development only within the urban service area, including freestanding growth centers, consistent with local comprehensive plans and metropolitan system plans.

* Retain the current urban service area boundary for the year 2000, making appropriate changes after verifying land demand and supply with local governments along the boundary line.

* Work with local communities through the comprehensive planning process to designate areas for longer term future urbanization by establishing 2005 and 2010 urban service area boundaries.

* Support three land use types outside the metropolitan urban service area: agriculture, rural centers and general rural use.

* Plan for higher-density development along selected transportation corridors where major transit capital investments are made, or at major transit transfer points (transit hubs and park-and-ride lots), and guide a portion of the region’s future growth to such corridors and localities.

* Work with local communities in a partnership to meet the range of housing needs of people at various life-cycle stages; broaden location choice and access throughout the region for people of all income levels; and support use of public funds to help achieve these goals.

* Promote a flexible, “cluster” planning process whereby local communities and other governmental entities can work together to resolve issues of regional concern in ways that are tailored to the needs and concerns of those involved.

* Give priority for funds for regional systems to maintaining, upgrading and replacing system facilities serving existing urban development to make the best use of investments the region has already made.

* Review special-purpose facilities or programs proposed by public or private entities that are designed to serve the general public; evaluate a proposed special facility by its own initiative or in response to outside requests; focus on the purpose of and need for the facility, whom it will serve, where it works best, and Council development objectives; review the financial elements for consistency with the Council’s economic evaluation criteria and other fiscal policies.

* Ensure that regional investments are made in a fiscally sound manner and achieve their objective of providing needed services and facilities at minimum cost to taxpayers.