Land and Value in the Heart of the Upper Midwest

by John R. Borchert and William Casey

Most of us, most of the time, ignore the built structures in our communities or take them for granted, whether they are in use, under construction, or standing in decay. To be sure, land and buildings get our attention in many piecemeal ways. Taxes on property bring revenue to local governments, so there are often arguments about the assessments of property in the community. Occasionally, structures are the subject of debates, when zoning or preservation become an issue. During planning and construction, each building commands the intense attention of its developers, and it continues to be the object of more or less attention from its occupants. But rarely do most of us contemplate structures and their land collectively as component parts of a vast, fragile device that the human race has built to enable itself to live on the earth.

The value of the structures and land around us has been created by the investment of labor and savings from past and present generations. The investments reflect the pragmatic responses of individuals and communities to their own needs. Consequently, the value of real property assets helps to answer practical questions about management and planning. How much new development is necessary to justify a given level of investment in streets, utilities, or public institutions in the community, the region, or the nation? What is the physical plant of a community worth and what share of the citizens' savings are necessary or justified to create and maintain it? But these investments also reflect dreams and commitments to the future of places and regions. The location patterns of the accumulated value of structures not only provide a record of practical action but also add to our understanding of the larger purposes of human use of the earth.

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A Regional Profile of Real Property Value

Where does one look to find the value of real property assets? The United States Bureau of Economic Analysis produces a highly informative and sophisticated annual estimate of the aggregate net value of all structures in the country. This overall estimate, however, cannot be broken down to specific metropolitan or local levels. The United States Census of Governments collects survey data on assessed value of property for selected metropolitan areas; but coverage is incomplete and not comparable among different areas. In short, we can’t describe the parts that comprise the whole.

Meanwhile, down at the local level, assessors’ records do measure real property values and they have the long-run potential of building a national system that monitors values from the individual parcel level upward. Computerization has accelerated the standardizing of valuation procedures and it is moving the state and national mass of assessors’ market value estimates toward accuracy and comparability. State and local governments in Minnesota and Wisconsin are in the front ranks of this process. These two states also encompass the economic and population core of the nation’s Upper Midwest region. Thus, this area is a natural laboratory in which the geographic patterns and change of real property values can be examined in some detail.

The economic heart of Minnesota and of the Upper Midwest region is the combined commuter areas of the Twin Cities, Rochester, and St. Cloud. This twenty-three-county system covers portions of two states and five state planning regions. It contains more than six hundred townships
and municipalities (minor civil divisions). Its three million inhabitants equal nearly two-thirds of the population of Minnesota and they number more than one-third of the population of the Twin Cities' primary trade and service area, which sprawls from northwest Wisconsin to eastern Montana, northern Iowa to the Canadian boundary. Our study was a reconnaissance of the real property value of assets in this twenty-three-county area—their locations, why they are there, and their fickle patterns of change. The study was an outgrowth of a geography seminar at the University of Minnesota. The data we used for mapping property values came primarily from the Minnesota and Wisconsin Departments of Revenue, the Minnesota Department of Transportation, and the Minnesota State Auditor. These numbers were assembled from the reports of individual county assessors' offices to the state. All values given here are expressed in constant 1988 dollars; and all are on the conservative side.

The estimated value of all of the structures and land in these twenty-three counties in 1988 was $142 billion. At that time, the area had 1.2 percent of the population of the United States, 1.3 percent of the personal income, and 1.4 percent of the real property assets.

Distribution of Property Values in 1988

The $142 billion inventory in the study area includes not only buildings of all kinds and also non-building structures—like streets, highways, railroads, airports, and utility lines—and the land associated with these structures. The structures are both privately and publicly owned. They are both old and new. Some have just been built, others are about to be abandoned. The residents of the area enlarge, improve, use, wear out, replace, and abandon all of this in continuing cycles. In 1988, if one stacked the property value within each township and large city into a single column the map would look like Figure 1. This shows a terrain of work, dreams, and power manifested in real property value laid on top of the land. Over the years, this surface will rise with a growing population and economy and, at the same time, undulate with changes in technology, style, and speculation.

Variations in Density of Property Value

To help grasp the geographical variations in property value, we divided the MCDs into five classes, based on the density of property values per square mile. The geographic patterns of the five classes are shown in Figure 2. The classes are a useful way to summarize the thousands of MCD values in our data:

1. The metropolitan central cities are Minneapolis and St. Paul, St. Cloud, and Rochester.

2. The Twin Cities suburbs include both a first and second ring. The first ring extends northwest from Roseville to Brooklyn Center; southward to Edina, Richfield, and Bloomington, and includes West St. Paul. The second ring extends west from South St. Paul and Inver Grove Heights; through Shakopee; north through the Lake Minnetonka suburbs to Anoka; then curves east through Blaine and White Bear and south to Woodbury.

3. Embedded in the landscape are the smaller cities and villages. These are older communities inherited from the railroad settlement era. They developed as farm trade centers in the rail era and they range in size from Winona and Faribault, through Amery and Cambridge, down to the unlabelled hamlets that mark the routes of all the rail lines.

4. Beyond the rings of Twin Cities suburbs we identified an urbanizing fringe. It includes not only the moderately-dense to scattered settlements of the outer suburbs of the Twin Cities but also similar urbanizing townships on the fringes of St. Cloud, Rochester, and Red Wing as well as the freeway and lakeshore development corridor from the Twin Cities northwestward through northern Wright and southern Sherburne counties.

5. The remainder of the townships fall into an open rural class.

The metropolitan central cities, first and second ring suburbs, and urbanizing fringes in 1988 were the locus of $118 billion in real property value—83 percent of the study area total, with an almost identical percentage of the population. The smaller compact cities—including both the seven-county Twin Cities area's free-standing centers and places in the outlying counties—accounted for $13 billion or 9 percent of the area's property wealth. The remaining 8 percent, or $11 billion, were spread across the predominantly agricultural rural townships, although even there exurban non-farm homes and businesses accounted for a quarter to half of the values.

Variations in Value According to Land Use

Property values can also be examined according to the ways in which land is used. We divided land use into five major classes. The commercial-industrial class includes...
not only the full range of retail, office, and industrial buildings but also taxable, privately-owned electrical utilities, communications, and railroad land and buildings. The residential class includes all dwellings. The tax-exempt class includes both government and non-government property such as schools, civic centers, churches, hospitals, and cemeteries. The public works class is mainly roads and streets, but also includes city water plants and sewers. Vacant and agricultural lands are combined. In the cities and suburbs, this class is entirely in vacant, developable land, often on the fringes, while in the rural townships it is almost entirely in agricultural land.

Figure 3 shows the distribution of real property assets by both density class and land use class. Most striking is the concentration of value in the combined residential and tax-exempt properties. The $74 billion in residential investments provides shelter directly for the area’s one million households. The $18 billion in tax-exempt property is used in services for these households—education, health, religion, public protection, parks, and cemeteries. If one excludes public works and vacant and agricultural lands, and considers only the buildings in the area, four-fifths of the total investment is dedicated to the “quality of life” activities of home and community.

Investments in private commercial-industrial properties and public works are about equal—$22 billion and $21 billion, respectively. The large role of public works is explained almost entirely by the high value of the highway and street network. That system accounted for more than ninetenths of the estimated value of public works, and nearly one-seventh of the total value of all property. The shift since 1920 from transportation by rail to transportation by highway and air moved most transportation assets from the private sector into the public sector.

The highest density areas also have the highest ratios of land and building development to public works investment. The Twin Cities and its developed suburbs average more than $6.5 billion of residential and commercial-industrial development for every $1 billion of public works in the urbanizing fringe, or a ratio of $2.4 billion to $1 billion. These data reinforce the idea that, given today’s technology, public works investments in high-density areas are the most efficient, while investment in low-density non-farm areas is a relative luxury.

How Location and Legacy Shape Property Values
Location creates property value. The location of a place is relative to the location of other places, and the value of that location depends upon the ease of reaching it from other places—its accessibility. Investment in buildings is concentrated in the most accessible locations. Investment in roads and streets is greatest in locations with the highest concentrations of buildings. High accessibility encourages investment in buildings, and high investment in buildings encourages investment in transportation.

Accessibility had one meaning in the railway age, up to about 1920, and had quite a different meaning in the auto-airplane age, since 1920. Before the 1920s, virtually all movement of people and goods between cities depended on railroads. Therefore, the growth of most villages and all cities emanated from the railroad station. Local movement to and from the station depended on streetcar (in the larger cities), wagon, and foot. Growth crowded as near as possible to the railroad station. Factories and warehouses depended completely on railroads for linkage to their distant markets and raw materials, but they also needed a local labor force, so they located along the railroad line but also crowded as near as possible to the center of the city. The result was more compact and higher density development than we know today.

Though inexorable, the change from the railway era has been gradual. We find that the mix of land uses in different types of settlement still reflects the past. For example, compared with the suburbs and the urbanizing fringe, the metropolitan central cities have large shares of their property value in high-density commercial and industrial development (Figure 4). The land use mix in the smaller cities and villages closely resembles that of the metropolitan central cities. The pattern of development in all of these places is a legacy from the rail era. They were the most accessible locations on the rail network. Their high densities and mix of development reflect the constraints of horse-drawn, streetcar, and pedestrian movement.

There is an overriding reason why the response to change has been gradual. Structures have long lives—on the average, more than a century. Hence, growth tends to be incremental, in and around places that already exist. Each generation adds structures to accommodate its own growth in numbers and wealth, yet no generation can afford to replace more than a small percent of the billions of dollars worth of structures it inherits in any decade. So each generation must also continue to use most of its legacy of buildings and other structures from earlier times.

In line with this tendency, investment in the regional highway system has partly reinforced the historic rail pattern. New roads serve the older rail-era cities. As a result, the location and land-use patterns of the rail-era cities, both large and small, are partly anachronistic. Because of the long life of structures, the change from settlement patterns of the rail age to those of the automobile and airplane age is evolving only gradually over several generations. For the most part, the bigger the city, the greater its inertia; and, of course, anything that increases the life expectancy of structures also increases the inertia.

While auto-era growth has continued to concentrate around the historic metropolitan nodes, investment has spread out in successively widening suburban rings. Figure 4 suggests that residential investment has led the outward march. Residential
property comprises only a little more than half the total value in the metropolitan central cities, but it rises to more than 60 percent in the first-ring suburbs and more than two-thirds in the second ring and in the urbanizing fringe.

At the same time, the share of nonresidential property value in the suburbs and urbanizing fringe is rising. Tax-exempt and commercial-industrial uses account for only a little more than one-tenth of all value in the urbanizing fringe; yet they have grown to comprise about one-fourth of the total in the second-ring suburbs, and more than one-third of the total in the first ring. Thus, it appears that business developments and tax-exempt schools, churches, and other institutions have followed the outward march, as residential expansion has created new markets and needs.

Beyond the suburban rings, urbanization has reached out farthest and fastest in the highway corridors. Public decisions on freeway timing and location were constrained by the settlement patterns already in place, but the freeways have also influenced the direction of new growth. Development investment has naturally favored highway proximity, though widely dispersed lake shores and cultural community ties have prevented any landslide toward the freeways.

Development of Value Within the Twin Cities

With more than one-quarter of the value per square mile on only 4 percent of the land, the Twin Cities are at the peak of the property value map in our study area. Overall, they were valued at more than $2.60 million per square mile in 1988 though at closer observation, of course, we see that values vary greatly within the cities. The map in Figure 5 outlines the one-mile-square sections that make up the central district (C) of each city, along with the four historic directions of growth around each center. Figure 6 presents the average property value per square mile in each of these ten sectors of the Twin Cities in 1988.

The central districts in each city attracted the highest level of investment when they were the nexus of the regional rail network, and they have continued to be the focus of subsequent high levels of rebuilding and expansion. From the beginning, market forces have been reinforced by public decisions. Property values averaged nearly $1.2 billion per square mile in central Minneapolis in 1988, more than half in commercial values and a quarter in tax-exempt institutional buildings. Comparable figures in central St. Paul were more than $860 million, with about 43 percent commercial and 42 percent tax-exempt. These numbers reflect mainly the greater office and retail development of central Minneapolis and the state capitol complex in St. Paul.

The main rail-industry corridor ran through the cities from north Minneapolis to South St. Paul. Within the corridor and northeast of it, development was divided from downtown by the rail lines. Industries brought the most widespread blight to this area, and its historic separation from the rest of the city is still visible.

The highest residential values in Twin Cities neighborhoods are southwest of both downtowns, as well as in the southern quadrant of Minneapolis. During the growth of the cities, these were the directions that offered the fewest barriers for the burgeoning white-collar commuter labor force in gaining access to downtown. That local advantage was reinforced by the natural site advantages of river bluffs, lakes in southwest Minneapolis, rolling lands near Minnehaha Creek in south Minneapolis, and high, rolling land in the Highland Park area of southwestern St. Paul.

A surprising 31 percent of residential property values lies within the two central sectors of the Twin Cities. The number reflects not only very high-density apartment blocks in both cities, but also portions of Summit Avenue in St. Paul, with its high-value homes. Nonetheless, more than two-thirds of residential property values lie in the outlying neighborhoods, and these values are not uniformly distributed. Values per square mile in the southwestern sectors are typically about twice as high as those in the northeast or northwest. In fact, southwest and south Minneapolis and

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**Figure 4. Land Use Mix in Different Development Density Classes, 1988**

**Percentage of Assessors' Valuation**

- **Metropolitan Central Cities**
- **First Ring Suburbs**
- **Second Ring Suburbs**
- **Smaller Cities and Villages**
- **Urbanizing Fringe**
- **Open Rural Townships**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Agricultural and Vacant</th>
<th>Commercial-Industrial</th>
<th>Tax-Exempt</th>
<th>Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0%</td>
<td>20%</td>
<td>62%</td>
<td>0%</td>
</tr>
<tr>
<td>20</td>
<td>10%</td>
<td>17%</td>
<td>70%</td>
<td>0%</td>
</tr>
<tr>
<td>40</td>
<td>22%</td>
<td>16%</td>
<td>62%</td>
<td>0%</td>
</tr>
<tr>
<td>60</td>
<td>22%</td>
<td>16%</td>
<td>62%</td>
<td>0%</td>
</tr>
<tr>
<td>80</td>
<td>22%</td>
<td>16%</td>
<td>62%</td>
<td>0%</td>
</tr>
<tr>
<td>100</td>
<td>22%</td>
<td>16%</td>
<td>62%</td>
<td>0%</td>
</tr>
</tbody>
</table>

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5
southwestern St. Paul contain nearly 40 percent of the total residential value in the two cities.

The historic northeast-southwest dichotomy in neighborhood property values persists beyond Minneapolis, into the first and second ring suburbs. In the first ring, value per square mile is twice as high in the southwest and south as it is in the north and northeast. In the second ring, the figure is twice as high in the southwest suburbs as it is in all of the others. The historic trend, once based on accessibility to downtown, was reinforced by the suburban terrain. Flatland residential building sites on the sand plain to the north, have generally commanded lower prices than the rolling, lake-studded glacial landscapes to the south and west.

**Change in Property Values**

The cultural landscape is part of a constant and unavoidable process of change. Each week new buildings, roads, power lines, and pipes are added to the system; but at the same time, the existing stock of structures ages slightly, slipping imperceptibly in value. What appears in principle to be a straightforward transformation actually involves shifts of value that are multi-faceted in their complexity and often puzzling in their detail.

To appreciate some of the factors involved, consider the changing value over time in one minor civil division (MCD), the smallest level for which we collected data. Visualize a township in the urbanizing fringe of the Twin Cities commuting area. Its location is thirty to forty miles from the two downtowns, twenty to twenty-five miles beyond the freeway corridor that circles the metropolitan area. The township boundaries enclose thirty-six square miles of rolling, glacial land. The land is partly built up but mostly field, pasture, and woods, among scattered lakes and wetlands. Numerous arterial highways crisscross the area and tie it to the rest of the region.

This community’s population grew from 1,500 to 2,500 between 1975 and 1988. Meanwhile, the estimated value of its real property increased from $56 million at the start of the period to $129 million at its close—with an accompanying transformation of the landscape. Table 1 illustrates the main changes that added up to an increase of $73 million in property values—$60 million in taxable property and $13 million in tax-exempt property and in public works.

The value of virtually all property in the township increased because of the growth of the Twin Cities metropolitan area. This single township was part of a bigger and richer market in 1988 than it had been in 1975. Because of outward expansion, it was effectively nearer the main metropolis than it had been. We refer to the value added by the size and proximity of the metropolitan market as “location value.” Increased location value added $17 million to the value of residential property and

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**Figure 6. Property Values in the Historic Sectors of the Twin Cities, 1988**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Millions of Dollars per Square Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minneapolis</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>1197</td>
</tr>
<tr>
<td>Southwest</td>
<td>227</td>
</tr>
<tr>
<td>South</td>
<td>198</td>
</tr>
<tr>
<td>Northeast</td>
<td>198</td>
</tr>
<tr>
<td>North</td>
<td>113</td>
</tr>
<tr>
<td>St. Paul</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>862</td>
</tr>
<tr>
<td>Southwest</td>
<td>244</td>
</tr>
<tr>
<td>Northwest</td>
<td>140</td>
</tr>
<tr>
<td>East Side</td>
<td>131</td>
</tr>
<tr>
<td>West Side</td>
<td>75</td>
</tr>
</tbody>
</table>

* See Figure 5 for a map of the sectors. Public works are excluded from the values given here.

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**Table 1. How Property Value Changed in One Composite Urbanizing Township, 1975-1988**

<table>
<thead>
<tr>
<th></th>
<th>Residential</th>
<th>Agricultural</th>
<th>Commercial</th>
<th>Tax-</th>
<th>Public</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Vacant</td>
<td>Industrial</td>
<td>Exempt</td>
<td>Works</td>
<td></td>
</tr>
<tr>
<td>Property Value in 1975</td>
<td>30</td>
<td>12</td>
<td>1</td>
<td>5</td>
<td>8</td>
<td>56</td>
</tr>
<tr>
<td>Increases in Location Value</td>
<td>17</td>
<td>9</td>
<td>0.3</td>
<td>5</td>
<td>8</td>
<td>26.3</td>
</tr>
<tr>
<td>New Building and Remodeling</td>
<td>32</td>
<td>1</td>
<td>1.8</td>
<td>2.5</td>
<td>14</td>
<td>50.3</td>
</tr>
<tr>
<td>Decreases from Deterioration</td>
<td>-2</td>
<td>-1</td>
<td>-0.1</td>
<td>-0.5</td>
<td>-4</td>
<td>-7.6</td>
</tr>
<tr>
<td>Changes Due to Land Transfers</td>
<td>-1</td>
<td>-1</td>
<td>-0.1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Increases in Crop Land Value</td>
<td>4</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Property Value in 1988</td>
<td>77</td>
<td>23</td>
<td>3</td>
<td>8</td>
<td>18</td>
<td>129</td>
</tr>
<tr>
<td>Net Change 1975-1988</td>
<td>+47</td>
<td>+11</td>
<td>+2</td>
<td>+3</td>
<td>+10</td>
<td>+73</td>
</tr>
</tbody>
</table>

* in millions of 1988 dollars.
another $9 million to the value of vacant land in this particular township.

In addition to growth because of location value, new construction added just over $50 million. Contractors built three hundred new homes and remodeled perhaps thirty old ones. Commercial builders added a strip mall and other new stores, restaurants, a self-storage center, and miles of new utility lines, along with the remodeling of an old creamery and lumber yard for light industrial use. In the tax-exempt sector, local governments built a new community center, fire station, and additional schoolrooms. Besides all the newly taxable structures—and partly because of them—state and local governments built and rebuilt more than forty miles of roads.

On the other hand, other changes partly offset these gains. More than $7 million in value disappeared as a result of depreciation. Some old homes suffered from age, obsolescence, and neglect. Many farm outbuildings, no longer needed, fell into ruins. An ill-conceived cluster of seasonal cottages fell victim to mysteriously rising lake levels. A few commercial properties lost value—not only due to age and physical obsolescence, but also because a new highway bypassed them. Storm damage and vandalism took a toll. Some agricultural and vacant land shifted from private ownership to public ownership. Despite the widespread collapse in farmland value following the speculative boom of the 1970s, agricultural and vacant land in this township showed a net gain because of the potential for urban development.

The township we describe is a composite, and it is only a small part of the twenty-three-county study area, but it illustrates the provocative questions and uncertainties we face in describing and interpreting property value changes. The $60 million growth in taxable property value in this one township accounted for little more than one one-thousandth of the increase for the entire Rochester—Twin Cities—St. Cloud corridor. An impressive $49.5 billion in taxable value was added between 1975 and 1988 in this twenty-three-county area (Figure 7).* The thirteen-year increase exceeded the entire accumulated value up to 1975. More than four-fifths of the growth—$40.5 billion—was concentrated in the seven-county Twin Cities metropolitan area. Thus the share of property assets in the region’s core area continued its 125-year rise.

The dominance of residential property persisted (Figure 8). Residential assets accounted for three-fourths of the total value in 1975 and three-fourths of the 1975-88 growth as well. One can see the phenomenal growth that occurred in the Twin Cities second ring suburbs and the significant spread of residential development to the small cities and villages and to the countryside of the outlying counties. The two main concentrations of agricultural and vacant land value are in the ring of urban land speculation on the edges of the Twin Cities and in the rural, predominantly farming, townships on the edges of the region.

* Both density and land use categories had to be changed when we began comparing 1988 data with 1975 data because of discrepancies in reporting. Tax-exempt and public works categories were dropped in the land use classes. We redefined the density classes into those inside the seven-county Twin Cities metropolitan area and those in counties outside the area because of the uniformity of reporting that was available in the Twin Cities Metropolitan Planning Region. Minneapolis and St. Paul, and those first and second ring suburbs remain the same as on Figure 2. Outer ring suburbs includes the remainder of the seven-county Twin Cities area, including its smaller cities and villages.
Overall, property assets rose much faster than inflation-adjusted income, which increased about 25 percent during this period. Explaining the difference is neither an exact nor a wholly definitive process. Important elements might be the general expansion of credit and the ability of developers to tap national and international capital and concentrate investment in a particular growth center at a particular time.

Change in the Outlying Counties

Outside of the Twin Cities metropolitan area, the market value of taxable property grew 81 percent between 1975 and 1988. This compares with a growth of 115 percent in the Twin Cities area. But the overall 81 percent masks disparities depending on how the land was used (Figure 9). Residential property value increased 117 percent, slightly less than the Twin Cities area rate—reflecting partly slower economic growth and partly a smaller average new-home size. Similar to the Twin Cities area, 72 percent of the total increase in property values in the outlying counties was in the residential class. Values for commercial and industrial property in the outlying counties increased by 83 percent, substantially below the rate of similar new investment in the Twin Cities area. This probably reflects the absence of monumental office construction and more modest industrial construction styles.

But the dramatic feature of Figure 9 is the roller-coaster in agricultural land values. They nearly doubled between 1975 and 1980 but had fallen 31 percent by 1988, and subsequently they have lost most of the rest of the earlier gain. Between 1985 and 1988, estimated market value of vacant and agricultural land fell by 25 percent in the outlying counties, while it rose typically between 8 and 15 percent in the Twin Cities area. The rise and fall reflect the wave of speculation that followed the increase in crop prices triggered by the United States–Soviet grain agreement in the early 1970s and the subsequent collapse of that boom a decade later.

The Path Ahead

Assessors records, on which our study was based, have the potential for building a national system for monitoring land and value. Assessors’ estimates of the market value of real property are an important part of the data going into geographic information systems (GIS). The ability to map public records and compare patterns, both graphically and statistically, brings with it a profound technological revolution. In the private sector, applications of GIS are well advanced in land development and property management, and particularly in the geographical aspects of marketing and utilities. The automation of both data handling and mapping has already resulted in improvements in the accuracy and availability of the records, and it promises much more on those counts.

To be sure, there is much to be done before the promise can be realized. Some tasks are as elemental as identifying parcels by their location in the original Public Land Survey. For a national system to be usable it is important that the same units of measurement are used in every state. It will be more difficult to generate data on the value of public works. Notwithstanding incredibly large and complex organization-al problems, a standardized nation-wide network will inevitably emerge. It will be possible to build national land use and land value data at every level, aggregated from local records. The new technology and the system it produces will help narrow the range of speculation and error in documenting and understanding the complex processes of land development.

Property value records are a remarkable set of data. They record through time and over space the oscillating terrain of land use and value both in public and in private domains. They have great current importance, and potentially greater future importance, for use in property accounting and planning. Moreover, these records are a rare, if not unique, means of describing the nation’s settlement system. The records can be aggregated from city lot to woodlot to field to ranch to region to nation. Though it might surprise assessors to hear it, their observations provide a link between architects, builders, and financiers (who create structures with ideas, materials, and money) and planners and politicians (who regulate where buildings will go and how they will be built), occupants (who live in the buildings everyday), and critics (who admire or dislike them).

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