Uneven Development: New Challenges for the Urban Core

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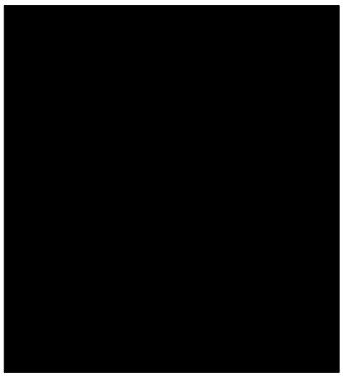
As discussed in chapters 4-7, technological change in addition to other economic, political, and social phenomena is redistributing people and opportunity across the American metropolitan landscape. Outer suburban and exurban areas, on the whole, have prospered in this redistribution, gaining large increases in population and both high-skilled and lower-skilled jobs. At the same time, the position of the urban core has become more precarious. The growth of producer services and some population increases through immigration have kept core economies viable. Nevertheless, problems of poverty, crime, and infrastructure abandonment have become increasingly entrenched. This chapter examines some of the mechanisms that account for the problems of the urban core and discusses possible sources of renewal. Finally, the chapter focuses on the issue of brownfields—abandoned, often contaminated, commercial and industrial sites—which is a major impediments to improving job opportunities in the core.



TECHNOLOGICAL CHANGE AND URBAN ADAPTATION[1]

The close relationship between cities and technology—including transportation, infrastructure, telecommunications, process technology and industrial and work organization—leads to mismatches and conflicts. Productive systems, especially in market-based economies, are characterized by their fluidity and openness to change, particularly stemming from the introduction of new

[1] This section is based in part on Brian Berry, "Classification Systems for U.S. Cities," report prepared for the Office of Technology Assessment, January 1995.

technology systems. Enterprises die and are born, contract and expand, move and reorganize, develop new products and adopt new process technologies. Likewise, although slower to change, the population's income, demographic characteristics, skills, and lifestyles also change and evolve, leading to new preferences for choices of regions, cities and neighborhoods.

In contrast, cities and their institutions adapt more slowly. Without adaptation, buildings can be abandoned or underutilized and land can become vacant. Institutions can become rigid and poorly suited to new challenges. Workforce skills and capacities can diverge from new workplace needs. Moreover, for some segments of the population, especially lower income groups, adapting to economic change is difficult, resulting in mismatches between skills, attitudes, and opportunity. Because these population groups are more heavily concentrated in certain regions and parts of metros, these places have felt the effects more profoundly.

As a result, there are two problems with adaptation. First, cities designed to fit old production systems cannot change as quickly. Second, and as a result, new production systems often locate in new places and spaces built to fit new systems more closely. Moreover, the ability of places to adapt to change depends on a number of factors, but perhaps none so important as the speed of change in production systems. When production systems are evolving slowly or along linear, well trod-paths, most cities have an easier time keeping up. In contrast, when production systems are transformed in sudden, discontinuous ways, as has happened a number of times in the history of America, and appears to be happening today, cities have a harder time adapting. For the speed as well as the discontinuity of the change brings new infrastructure needs and systems, new sectors and jobs with their own locational imperatives, and new process technologies that change locational calculus. The results are mismatches, with some places well-suited to new production systems growing rapidly, and others less well-suited growing more slowly or even declining.

The history of the American economic system is littered with failed enterprises that, because of the nature of their products, processes or management systems, were unable to adapt and went out of business to be replaced by firms better suited to the new environment. Likewise, some cities have been well-positioned or able to adapt while others have not. Some places will be able to adapt more easily than others because their location, infrastructure, business or population are more suited to the new environment. In addition, because adaptation is first and fundamentally a manmade process of investment and disinvestment, some cities will simply be organized to do better than others. Thus, the history of American cities is in one sense a story of cities growing and prospering during certain technological epochs and then either adapting to the next phase, or not making the transition and declining or stagnating in real or relative terms.

OTA concludes that the current wave of technological change will continue to cause metropolitan areas to grow. The United States. is not undergoing and will not undergo in the immediate future a radical deconcentration of employment and population to small towns and rural areas. Nevertheless, the advantages of some higher-cost, and usually the largest, metropolitan areas, such as New York, Boston, Los Angeles, and San Francisco, are weakening. The national redistribution of economic activities due to sectoral and residential change is also having a dramatic effect on the location of jobs and residences within metropolitan areas. As late as the 1960s, most core cities had advantages stemming from agglomeration and centrality (in terms of travel from the suburbs) that outweighed their high costs. However, technological change and other factors have reduced and continue to reduce the privileged position of the core, in some sense making it one of several "edge cities" within the metropolis. By widening the potential number of sites available for business location, technology has accentuated the tendency for jobs to follow people to the suburbs, reducing investment and jobs in many urban cores. Moreover, urban core economies, particularly the central

business district, increasingly contain more specialized functions employing skilled and educated people. In contrast, lower-skill work—particularly in goods production, transportation and distribution—has increasingly migrated away from the core to the suburbs. These changes have led to reduced opportunities for low- and moderate-income urban residents and to reduced investment and an increasing underutilization of the built environment (land, buildings and infrastructure), with resultant fiscal problems for many urban core governments.

JOB OPPORTUNITIES FOR URBAN CORE RESIDENTS

The weakening of many urban economies and the change in their sectoral and occupational composition will affect the economic opportunities available to low- and moderate-income core residents, particularly minorities.

First, as discussed in chapter 3, a number of metropolitan areas have experienced economic decline or stagnation, in part because they have been unable to adapt adequately to the new economy. In these economies, unemployment is higher for low- and moderate-income persons in the urban core than for similarly placed people in healthier metropolitan economies. There seems to be a positive correlation between overall metropolitan growth and growth in most portions of the metropolitan area, including the central city. People are attracted to a metropolitan area and then are dispersed throughout the region, depending on the competitive advantages of the different parts. In the 1980s central cities within fast-growing metros did better than central cities within slower-growing metros.[2] Thus, urban core problems of unemployment and poverty tend to be worse in the stagnant or declining metropolitan regions of the Northeast and Midwest as compared to the South and West.

Second, problems exist with the structure of job opportunities for low- and moderately-skilled workers, even in healthy metropolitan economies. The **spatial mismatch** between the suburban location of new jobs, especially blue collar jobs and jobs requiring lower education and skill levels, and lower-skilled, often minority residents in the core has increased in the last two decades.[3] The spatial mismatch hypothesis is controversial, but scholarly research does seem to indicate that spatial mismatch has gotten worse in the last decade as more low-skilled jobs than low-skilled workers have migrated to the suburbs, an effect which is more pronounced for blacks than for whites.[4] Whites appear to adapt to spatial change more easily than blacks by being more able to relocate to the suburbs. Furthermore, research shows that decentralization is *not* offset with longer commuting among blacks and central city residents.[5] On the contrary, blacks and inner-city residents travel shorter distances to work than suburbanites but take considerably more time traveling to work and when searching for work. Indeed, Holzer, Ihlanfeldt, and Sjoquist found that the time spent traveling per mile for black central

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[2] Mark Alan Hughes, "Formation of the Impacted Ghetto: Evidence from Large Metropolitan Areas, 1970-1980," *Urban Geography,* vol. 11, No. 3, 1990, pp. 265-284; Timothy J. Bartik, *Economic Development and Black Success* (Washington, DC: U.S. Department of Commerce, Economic Development Administration, 1993).

[3] Harry Holzer, Keith R. Ihlanfeldt, and David L. Sjoquist, "Work, Search, and Travel Among White and Black Youth," *Journal of Urban Economics*, vol. 35, 1994, pp. 320-345; Keith R. Ihlanfeldt, "The Spatial Mismatch Between Jobs and Residential Locations Within Urban Areas," *Cityscape,* vol. 1, No. 1, 1994, pp. 219-244; John F. Kain, "The Spatial Mismatch Hypothesis: Three Decades Later," *Housing Policy Debate*, vol. 3, 1992, pp. 371-460; Christopher Jenks and Susan E. Mayer, "Residential Segregation, Job Proximity, and Black Job Opportunities," Lawrence E. Lynn, Jr. and Michael M. McGreary (eds.), *Inner-City Poverty in the United States* (Washington, DC: National Academic Press, 1990).

[4] Hispanics appear to fall between non-Hispanic whites and blacks. See Keith R. Ihlanfeldt, "Intra-urban Job Accessibility and Hispanic Youth Employment Rates," *Journal of Urban Economics*, vol. 33, 1993, pp. 254-271.

[5] Holzer et al., op. cit. footnote 3.

city residents is twice that of suburban whites, partly because more whites use their own car to get to work than do blacks (69 percent for whites versus 43 percent for blacks), who are more dependent on public transportation. Poor residential and transportation mobility inhibits job accessibility. Job decentralization, moreover, also inhibits the flow of information about job opportunities, because information regarding job opportunities decreases with distance. Many jobs are discovered through informal social networks and much hiring is done on the basis of personal knowledge of job candidates or referrals. Because inner city residents do not live near suburban jobs, they may have more difficulty getting vital information about openings, as well as support during the application process.

Spatial mismatch, then, has a number of important effects on the employment of central city residents, which are particularly pronounced among blacks. Most importantly, it leads to greater and longer unemployment among low-skilled central city residents. The duration of unemployment is 25-30 percent longer for blacks than whites, as the former are more heavily concentrated in central cities.[6] Spatial mismatch also leads to lower wages in the central city because a large supply of low-skilled workers bids wages down. And for those who do commute, job decentralization increases the cost of commuting, lowering the net pay of central city residents working in the suburbs. Spatial mismatch is not the only cause of major employment problems for disadvantaged urban residents, but it does contribute to difficulties.

Third, as production has reorganized, in part as a response to technological change, skill and educational requirements for many jobs in metropolitan areas, particularly in central cities, have increased. As a result, the **skills mismatch** between the skills and educational levels of urban core residents and urban core jobs has increased. The skill level of jobs in many industries is rising, and likely to continue to rise. For example, as the many information-based service industries use more technology and less labor, the skill requirements of the labor force increases. Not only are organizations leaner, they must respond faster and they must complete tasks correctly the first time. In flat organizations there is no place to refer difficult questions, catch errors, or develop successors through on-the-job training. Employers expect technical proficiency in operational aspects of the business. Moreover, in many service sectors, many lower-skill office jobs are disappearing and in their place are more complex customer service and back office jobs. Customer service employees increasingly must have the personality to respond to customers, conventional speech patterns, be able to solve problems on the spot, and know the products thoroughly. In addition, perceived or actual work ethic differences play a role.[7] In many functions, such as customer service, advanced computer technologies make work much more demanding, for example, by eliminating pauses to rest as customers' files take time to come up on the terminal.

As discussed in chapter 3, these sectoral changes are reflected in the transformation in educational levels of central city employees (regardless of place of residence). Employment opportunities for those with a high school education or less, a larger proportion of whom are found in the urban core, have declined dramatically. Skills and spatial mismatch have combined to lower employment rates, particularly among minorities. Though not the only cause, unemployment among male high school dropouts and high school graduates is a big contributor to central city poverty, which has risen rapidly over the past 20 years.[8] In addition, a contributing factor to the declining

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[6] Ibid.

[7] U.S. Congress, Office of Technology Assessment, *Worker Training: Competing in the New International Economy,* (Washington, DC: U.S. Government Printing Office, September 1990).

[8] William Julius Wilson, *The Truly Disadvantaged* (Chicago: University of Chicago Press, 1987)

BOX 9-1: Work-Based Learning: Jot

With nearly 40,000 people employed by companies doing business at the port, and many thousands more working in nearby port-related enterprises, Port Newark-Elizabeth, located on the New Jersey side of the New York-New Jersey port, is one of the New York area's most important centers of commerce In response to concerns expressed by port businesses about their need for better-trained personnel, the New York-New Jersey Port Authority, in cooperation with the community colleges of Essex and Union counties, established the Jobsport Educational Institute.

Jobsport offers a mix of basic and specialized training programs They include GED courses, workplace literacy training, English as a second language—increasingly important m a community in which immigrants represent a steadily growing share of the labor pool—and training in computer information systems. One of Jobsport's most innovative programs is geared to training front-line supervisors in transportation, distribution and other trade-related businesses. The program covers topics such as motivating workers, delegating authority, dealing with "problem" employees, and union relations

Jobsport also provides more specialized training programs at the request of individual employers—for example, training in the processing and preparation of imported automobiles for distribution to dealers, and training of customer relations staff. The programs can be conducted either at Jobsport's training center, or at the employer's facilities

In addition to its training programs, Jobsport offers residents of the communities around the port—which include some of the poorest neighborhoods in the New York metropolitan area—an easily accessible source of information about employment opportunities in port-related businesses

earnings and employment prospects of the central city poor, particularly minority poor, is their increasing isolation into racially and economically segregated neighborhoods. The end result is, as Hughes notes, the concentration of poverty and the reconcentration of opportunity.[9]

IMPROVING OPPORTUNITIES FOR URBAN CORE RESIDENTS

There are three general approaches for improving the fortunes of residents of the urban core who have been hardest hit by contemporary economic, technological, and spatial change. First, following from the notion of skills mismatch, is improving the education and skills of core residents. Improving the performance of urban schools is a critical task. However, attention must not only be paid to the quality of public education in the core, but also its applicability to industry needs. Some have suggested the need for enhanced technical training and apprenticeship programs for the non-college-bound.[10] An example is the New York-New Jersey Port Authority's Jobsport program, which offers a notable example of cooperation between a transportation agency and local educational institutions in meeting the human resource needs of goods movement enterprises, while at the same time helping local residents gain access to job and training opportunities (see box 9-l).

Second, following from the idea of spatial mismatch, is the need to improve the access of central city residents to suburban jobs. This can be done either by improving transportation links between the core and the suburbs or by helping core residents move to the suburbs. Given the difficulty of "opening up the suburbs," at least in the short-run,

[9] Mark Alan Hughes, "Luncheon Address: Reverse Commuting in a Policy Context" in American Public Transit Association, *Access to Opportunity: Linking Inner-City Workers in Suburban lobs* (Washington, DC: American Public Transit Association, 1994).

10 U.S. Congress, Office of Technology Assessment, *Learning to Work Making the Transition from School-to-Work,* OTA-EHR-637 (Washington, DC: U.S. Government Printing office, September 1995).

Hughes suggests a mobility strategy would help the inner-city poor reach suburban jobs, thereby lowering unemployment and poverty rates.[11] Clearly there is an important role for public mass transit in this regard. However, efforts need to go beyond this to also improve linkages with employers.[12] For instance, Ihlanfeldt agrees that programs that enable more efficient job searching and provide incentives for employers to improve accessibility to urban blacks are necessary. But, because inner-city residents are often limited in their access to jobs due to dependence on public transportation, he argues, there is a need for privatization, allowing entrepreneurs or private/public partnerships to provide reverse commute services. An example is development of shuttles running from public transportation nodes along major suburban roads to take commuters to and from places of work. Suburban employers might also take a role in providing transportation for their employees as participants in public/private partnerships.[13]

Analysts stress that these strategies are more effective when complemented by others such as the Earned Income Tax Credit to supplement wages of entry-level jobs, making employment a more attractive option and offsetting the transportation costs of longer commutes.[14] Resolving spatial mismatch also demands improving the job information systems which might supply inner-city residents with information on suburban job openings and help create matches between the two. Often non-profit intermediary organizations can play an important role, not only to screen perspective job seekers but also to work with employers to identify openings. For example, Suburban Job Link in Chicago performs this role to link disadvantaged residents on the near-west side to suburban employers.

The third general approach to improve the fortunes of core residents is by providing new job opportunities in the core through a variety of "reurbanization" strategies. Reurbanization refers to increasing the level of use of, and capital investment in, urban land and infrastructure. Reurbanization does not imply a return to a traditional monocentric urban form. A more likely outcome of reurbanization is a multinodal urban structure in which revitalized suburban centers are encouraged. Nor does it necessarily imply an increase in net population densities, although gross densities are expected to increase through a more effective use of vacant and marginal lands.

FACTORS FACILITATING REURBANIZATION

Over the past decade there have been a number of economic and demographic forces driving reurbanization. There are some small pockets of revitalization based on gentrification by middle- and upper-income households and the revitalization of working- and middle-class neighborhoods into vibrant ethnic immigrant enclaves. Richard Nathan has called these places "zones of emergence."[15] In New York City, for example, Korean, Chinese, and Japanese businesses have revitalized the Flushing neighborhood. It may be that these quiet

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[11] Mark Alan Hughes, "Employment Decentralization and Accessibility," *Journal of the American Planning Association Jornal*, Summer 1991, pp. 296-97. See also American Public Transit Association, op. cit., footnote 9.

[12] Stephen Blake, "Inner City Minority Transit Needs in Accessing Suburban Employment Centers," (Washington, DC: National Association of Regional Councils, 1990).

[13] Keith R. Ihlanfeldt, "The Spatial Mismatch Between Jobs and Residential Locations Within Urban Areas," *HUD Regional Growth and Community Development Conference*, 1993, pp. 25-6. See also Robert J. Klein, "Access to Jobs: A Public Transit Agency's Initiative for Privately Operated Service," *Transportation Research Record*, vol. 1349, pp. 118-120; and Sandra Rosenbloom, "Reverse Commute Transportation: Emerging Provider Roles," (Washington, DC: U.S. Department of Transportation, March 1992).

[14] Ihlanfeldt, ibid.

[15] Richard Nathan, *A New Agenda For Cities* (Annapolis Junction, MD: National League of Cities, 1994).

changes are what constitute real revitalization. Wolman, Ford, and Hill argue that big, physical redevelopment projects downtown seem like successful change, but on the whole do not translate into increased economic well-being for residents.[16]

Reurbanization might also be based on a number of competitive strengths, which if enhanced, could help cities maintain employment. First, many downtowns still have strong agglomeration economies. Providers of higher-order business services are clustered downtown, making it easier for face-to-face learning and innovation to occur. In addition, the central business district (CBD) is still a prestigious location in most metros. The best hotels are often downtown; exclusive clubs where business leaders can meet and exchange information and develop informal networks are normally located downtown; and an address such as "Wall Street" or "Michigan Avenue" is still desirable for some businesses. The relative centralization of higher-order business services shows that agglomeration economies are still an important source of competitive advantage. While this will continue to be a source of strength for central cities, advances in information technology are likely to weaken its importance (see chapter 4). Moreover, the producer services boom of the 1980s is unlikely to be repeated.

Second, in many older cities, such as Philadelphia, New York and Chicago, transit provides excellent accessibility to the CBD, particularly for lower-level employees, thus enhancing its attractiveness as a business location. Although passengers are often not enthusiastic about the quality of service, regional rail lines in many cities do provide a viable alternative to driving into the city. In most cases, tickets cost less than parking, and in some cases travel time is less. The transit advantage many core cities enjoy may become more important if Clean Air Act mandates for employer trip reduction programs are enforced. Many states, for example, enacted employer trip reduction programs requiring large employers in nonattainment areas, normally the largest metropolitan areas, to submit plans that would increase the ratio of employees to vehicles arriving at their work sites. The Employer Trip Reduction Program may favor center city employers, since more of their employees use mass transit. It may also encourage more experiments with telecommuting.

Third, while in many metros the cost of land and labor in central cities is higher than in the suburbs, market forces are likely to lead to some readjustment. In a number of cities, the glut of office spaces in the CBD combined with strong demand in the suburbs, has meant that companies can move to new offices at very low cost. For example, in 1987, net rent for the Sears Tower was $22-26 per square foot, while operating costs were $6.50 and taxes $8.50. However, because of the movement of Sears to the suburbs and the glut of Class A and B office space in the downtown, it now rents for $22 gross, while net rent is now close to $1 per square foot.[17]

Similarly, in many metros it is hard to get workers in the suburbs, particularly for lower-wage routine jobs, since so many firms have moved there. For example, in Milwaukee, where metropolitan unemployment rates are 3.8 percent, a number of manufacturers have expressed interest in locating a portion or all of their employment in the central city in order to access the urban labor force, as long as environmental (brownfield) and crime problems can be solved.[18]

If core and suburban costs begin to converge, cities will increasingly rely on firms that are pay-

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[16] Harold L. Wolman, Coit Cook Ford III, and Edward Hill, "Evaluating the Success of Urban Success Stories," *Urban Studies*, vol. 31, No. 6, 1994, pp. 835-850.

[17] Discussion with Philip Domenico, John Buck Co. (Building manager, Sears Tower), September 1995.

[18] Sammis White, M. Marc Thomas, Nicholas A. Thompson, "Changing Spatial Patterns of Employment Location: Milwaukee, Wisconsin, 1979-1994," report prepared for the Office of Technology Assessment, 1995.

ing less rent and employing lower-wage workers. Just as rural America was the site of much low-wage manufacturing because of cheap labor and land, America's urban cores may become home to low-wage manufacturing and services, particularly those tied to markets or agglomeration economies. Rural areas that rely on a low factor cost strategy can gain needed jobs and development, but have difficulty increasing standards of living. The same may become increasingly true for cities.

Property utilization strategies that companies employ may also benefit the core. For example, as companies attempt to minimize the cost of doing business, many eliminated leased space in favor of ownership. The glut of low-cost buildings in the core may be attractive to many companies; that is, owning office space in the central business district may be cheaper than leasing space in the suburbs. For example, Colonial Penn Life Insurance, a long-established tenant leasing in downtown Philadelphia, had been looking for a new location for its headquarters and was considering the suburbs. However, it was able to buy a building close to its current one in the downtown at a very low cost. Total costs, including renovation, were less than half of buying or constructing a building in the suburbs.

Finally, politics, regulations, image and civic commitment keep many companies in the core, even if suburban locations are cheaper. Major employers in many cities are often sensitive to the city's position, and they know they will win political and public goodwill by keeping offices in the city. Regulatory bodies and union pressure also keep employment in the core. For example, when Provident Mutual merged with Covenant Mutual, the company began to move employment out of downtown Philadelphia to the suburbs, but the Pennsylvania Insurance Commissioner approved the merger on the condition that no more than 100 jobs leave. Public Utility Commissions have placed similar pressures on telecommunications operations.

FACTORS INHIBITING REURBANIZATION[19]

There are a range of factors that are likely to inhibit reurbanization. The most obvious constraint is economic: first, the high costs of site acquisition, preparation and rebuilding; and second, the absence of a strong demand for inner-city locations and older buildings. Urban America already has an excess supply of serviced land and building space.

These problems are exacerbated by a series of institutional constraints that add to the expense of using land in the core. In older districts, titles to property are often obscure, missing, contested, or tied up in court. Any attempt at large-scale redevelopment invariably involves the acquisition of sites in multiple ownership, thus multiplying costs and legal difficulties. Moreover, most older urban districts also are enmeshed in a myriad of overlapping and often contradictory institutional regulations affecting the use of land and buildings and the provision of public goods and services. In combination these tend to freeze urban landscapes in their current state. The rigid nature of zoning is a case in point, and other examples include occupancy standards, building bylaws, fire codes, and parking requirements.

Third, most inner cities are characterized by relatively high property and business taxes and high fees for services compared to their suburban counterparts. In the absence of region-wide or state-level revenue sharing, these taxes serve as a severe impediment to redevelopment and adaptive reuse, and a major stimulus to extensive suburbanization. With the loss of many middle-class residents to the suburbs and the continued decline of state and federal aid to local governments, fiscal disparities between the central city and the suburbs have increased. In 1987, residents in central cities paid 25 percent more per capita in taxes than residents in the suburbs. Adjusted for income the difference is 44 percent, increasing from just

[19] This section is based in part on Larry S. Bourne, "Reurbanization and Urban Land Development: U.S. Cities in a Comparative Context," report prepared for the Office of Technology Assessment, May 1995.

18 percent in 1981.[20] Tax rates in central cities are higher than in suburbs because of higher social service costs, declining residential tax bases, increased infrastructure maintenance costs, and sometimes less efficient government. For example, tax rates on office space in DuPage County outside Chicago are about one-third of rates in Chicago. In Philadelphia, taxes and maintenance costs are also at least $1 per square foot higher in the CBD. Moreover, many cities levy a wage tax. Philadelphia's current wage tax is 4.96 percent for city residents and 4.31 percent for those who only work in the city.

The general absence of a strong demand for inner-city locations and older buildings in most American cities is made worse by the prevailing images of suburbia as places for living and increasingly for business, and of central cities as places to avoid because of decay and crime. Yet, many firms report that they would stay downtown if it were safer and more attractive. One innovation to improve the image of the central city is the business improvement district, or BID.[21] These are ostensibly private organizations that are allowed to tax commercial property within prescribed districts in order to provide extra police protection, sanitation, and other management functions. Now operating in the central business districts of many large cities (among them New York, Philadelphia, and Baltimore), they have been effective in combating "crime and grime" within their districts, but not in the larger community where the problems are much worse. Such privatization innovations are not limited to the CBD. In Chicago, for example, local officials have considered making design modifications to existing industrial areas to make them more secure. In many older areas a number of manufacturing firms are often located in small, detached buildings along several city blocks. One proposal would close off a number of streets to create an industrial park with one secured entrance.

Finally, in the view of many local government authorities, the most important constraint on reuse and redevelopment is environmental. Authorities cite excessively high and rigid standards for environmental cleanup of older sites (especially contaminated industrial sites), the uncertainty of downstream cleanup costs, and the potential legal and financial liabilities associated with cleanup. This is generally discussed in terms of the issue of abandoned land and buildings known as brownfields. The rest of this chapter is devoted to this issue.

UNDERUTILIZATION OF URBAN CORE INFRASTRUCTURE: THE PROBLEM OF BROWNFIELDS

The extent of misallocation and underutilization of urban land and buildings and the premature writedown of investments in the built environment is largely unknown. Municipalities do not keep data on the number of vacant sites, let alone the underuse of land and buildings. A number of cities, among them Pittsburgh, are beginning to develop inventories of larger unused sites that might be useful for commercial or industrial users, with the aid of geographic information systems technology. Despite the absence of documentation, there is general agreement that vacant, derelict and abandoned land and buildings in older cities are significant and growing.

The city of Detroit, perhaps more than any other city, illustrates the scale and complexity of land and building abandonment. Since 1950, the city has lost more than 50 percent of its manufacturing base. Its population has declined from 1.9 million in 1950 to about 1.0 million in 1990, and slipped from 45 percent of its Metropolitan Statistical

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[20] Roy Bahl "Metropolitan Fiscal Disparities," *Cityscape*, vol. 1, No. 1, 1994, pp. 293-306.

[21] William J. Mallett, "Managing the Post-industrial City: Business Improvement Districts in the United States," *Area*, vol. 26, No. 3, 1994, pp. 276-287.

Area (MSA) population to less than 21 percent. Given that the population of the entire southeast Michigan region has remained more or less stable since 1970,[22] the impact on the city of continued population and employment decentralization has been dramatic. Because Detroit's most rapid growth took place later than most industrial centers in the Northeast, its initial building and population densities were lower, and thus the amount of land and infrastructure left idle by the rapidly declining population, housing stock and industrial base is huge. Some estimates, provided by local researchers and supported by other sources, suggest that over 30 percent of the physical land area of the city is either vacant or near-vacant and is increasing.

Like Detroit, the Pittsburgh story of massive deindustrialization, blight, and long-term economic adjustment is well known.[23] Once the country's iron, steel, and coking center, with the highest proportion in the country of its labor force in manufacturing (40 percent), Pittsburgh's industrial structure has been in decline since World War II. The population of the city, once over 677,000, is now less than 380,000. The city is also politically fenced in; it is one of 130 municipalities within Allegheny County, and is set within an equally fragmented urban region. In the last twenty years it has lost over 60 percent of its manufacturing jobs.[24] (The decline has been greater for many smaller communities along the Monongahela River). As a consequence, and given its restricted site, Pittsburgh has inherited a massive problem of vacant and underused property, much of it contaminated, as well as an outmoded industrial landscape and infrastructure. In the eight-county Pittsburgh region there are approximately 450 abandoned and possibly contaminated sites, with an average size of 2.5 acres, totaling 1,125 acres or 2 square miles. This does not include small vacant lots.[25]

The existence of potentially contaminated and abandoned property is not a new problem in many metropolitan areas, especially older, central cities and suburbs. Where industry has closed or moved, land and buildings are left behind, idled, or underutilized, jobs are lost, and local tax revenues reduced. Recently, significant attention has focused on these sites, referred to as brownfields, and the problems associated with their cleanup and reuse. The Environmental Protection Agency (EPA) defines brownfield as: "abandoned, idled or underused industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination."[26] Often the sites were, or may still be to a lesser extent, used for industrial or commercial activities where hazardous substances were handled, manufactured, or stored. The extent of contamination at brownfield sites ranges from low or moderate to extremely hazardous. Even abandoned properties with no contamination can suffer from the stigma of brownfields until a site assessment determines they are clean. Even then, properties with poor development potential may remain underutilized.

A small number of brownfield sites may have high levels of contamination and are candidates for addition to the EPA's National Priorities List or similar state priority lists. A large number of con-

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[22] Southeast Michigan Council of Governments (SEMCOG), *Land Use Tools and Techniques* (Detroit: SEMCOG, 1994).

[23] R. Beauregard, P. Lawless, and S. Deitrick. "Collaborative Strategies for Reindustrialization: Sheffield and Pittsburgh," *Economic Development Quarterly,* vol. 6, No. 4, 1992, pp. 418-430.

[24] Evan Stoddard, "Urban Redevelopment and Environmental Recovery: The Experience of Pittsburgh," paper presented at the International Soil Congress, Austria, September 1994.

[25] Discussion with Joel Tarr, Carnegie Mellon University, July 1995.

[26] Timothy Fields, Jr., Deputy Assistant Administrator, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, "Federal Agency Brownfields Initiatives," presented at the Environmental Law Institute's Redeveloping Brownfields Workshop, Washington, DC, Mar. 28, 1995.

taminated sites will never be put on these lists because they are not badly enough contaminated or have not been evaluated. Information about many sites is currently unavailable. The threat to public health from brownfield contamination varies widely (and is unknown in some cases), depending on the nature and extent of contamination, the exposure patterns, and the use of the site and surrounding area.

Estimates of the number of brownfield sites in the United States vary from tens of thousands to nearly 450,000 sites; the number of acres involved is equally uncertain. The sites vary from less than one acre to hundreds of acres. Many sites are concentrated in the Northeast and Midwest but brownfields are also common in the South and West and represent a wide variety of past industrial and commercial uses. Brownfields are frequently identified with distressed urban areas, particularly central cities and inner suburbs. Many of these areas have undergone deindustrialization, leaving abandoned and contaminated lands and buildings, making redevelopment difficult. In all cases, as a known or potentially contaminated site, brownfield property is worth less than property known to be clean.

Some metropolitan regions have recently initiated brownfield inventories. Chicago, for example, has identified over 2,000 brownfield sites in its metropolitan region, involving approximately 1,500 acres of underutilized land, which is nearly 18 percent of its planned industrial acreage.[27] On the West Coast, Portland has identified approximately 40 sites involving nearly 400 acres of underutilized land.[28]

Brownfields complicate economic development in many communities. In large part, this is because legal uncertainties attend brownfields, including difficult and costly cleanup requirements, cleanup standards, liability, and the availability of financing. Thus, brownfields contribute, in part, to reduced economic development and job creation in urban areas, particularly in central cities and older suburbs. Brownfields may also lead to development of previously unused land on the urban fringe, creating urban sprawl, traffic congestion, and loss of open space.[29]

Brownfields are getting more attention now partly because old, abandoned infrastructure, such as factories, mill sites, and warehouses, were not considered a threat to either human health or the environment until the mid-1970s when concern about contamination rose.[30] Over time and with the creation of the Superfund law in 1980 in the wake of Love Canal, the complicated environmental and liability issues surrounding many of these properties became better known.

Addressing the problem of brownfields is a complex task partly because of the many stakeholders who are interested in these sites. Brownfield discussions involve property owners, developers, bankers, environmental consultants, insurance providers, environmental and community development organizations, and regulators from all levels of government. Each stakeholder group has interests and concerns that must be considered in the context of the alternative perspectives represented by other parties. Based on a review of the brownfields literature and reports from the major brownfields forums recently under

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[27] U.S. Congress, General Accounting Office, *Reuse of Urban Industrial Sites*, GAO/RCED-95-172, (Gaithersburg, MD: General Accounting Office, June 1995).

[28] Institute for Responsible Management, Inc., "State Brownfields Policy and Practice," Conference Proceedings, Boston, MA, January 1995, p. 57.

[29] Bourne, op. cit., footnote 19.

[30] In 1976, the Resource Conservation and Recovery Act was enacted by Congress, and New Jersey adopted the New Jersey Spill Compensation and Control Act, a state "superfund" law.

way (in Chicago and Cuyahoga County, Ohio), there appears to be some agreement on the primary issues and on avenues for improvement.[31]

Technical Issues

The technical issues involve accurately assessing the type and extent of contamination, and deciding on cleanup standards and procedures. When the level of cleanup and the remediation process are unclear, uncertainties about time and money arise and impede action. In addition, the difficulty of fully and accurately assessing site contamination contributes to uncertainty about liability, because future owners may be responsible for cleanup of prior contamination.

In order to address remediation at brownfield sites, regulators must determine what level of initial site investigation is necessary to identify the type and extent (or absence) of contamination. Identification generally begins with a Phase I Site Assessment during which environmental consultants are often engaged to examine government and other historical records, perform site reconnaissance, and interview owners, occupants, and others associated with the site. If a Phase I assessment reveals evidence of contamination, a Phase II assessment may be conducted, including sampling of soil and groundwater. Until Phase II is complete, the exact level of the hazard posed by the site is not known, nor is the potential for enforcement action under federal or state Superfund laws; this means the potential remediation costs are unknown.

The uncertainties related to environmental remediation are especially troublesome for the developer who must meet a budget and schedule to stay in business. Depending on a state's procedures for managing hazardous waste cleanup and the characteristics of a given site, identifying and cleaning up contamination ranges from a fairly straightforward to cumbersome and time-consuming process.

Legal Liability

Legal liability at brownfield sites is also sometimes a barrier to cleanup and redevelopment. The potential for liability associated with hazardous waste sites is especially complicated by complex and often overlapping laws at the federal and state levels. Depending on the type and extent of contamination, as well as the current capacity (active or inactive) of a brownfield site, enforcement action may be warranted under the federal Superfund program, state superfund programs, the Resource Conservation and Recovery Act (RCRA),[32] and other federal and state environmental laws.[33]

The law most often associated with liability at brownfield sites is CERCLA, later amended in 1986 as the Superfund Amendment and Reauthorization Act (SARA).[34] The statute was passed in order to identify and clean up chemical spills and abandoned hazardous waste sites that pose a threat to human health and the environment. CERCLA is particularly significant due to its far-reaching enforcement capability. It applies strict, joint and

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[31] U.S. Congress, Office of Technology Assessment, *State of the States on Brownfields: Programs for Cleanup and Reuse of Contaminated Sites* (Washington DC: Office of Technology Assessment, June 1995).

[32] 42 U.S.C. Secs. 6901-6992.

[33] For example, sites involving contamination with petroleum-based chemicals are typically treated under state laws specifically created to address this problem.

[34] Public Law 99-499, 100 Stat. 1613 (1986).

several, and retroactive liability to the environmental cleanup of hazardous substances.[35] The law identifies a number of parties that may be held responsible for a site cleanup including:

- current owners or operators of contaminated property,
- owners or operators of property at the time it became contaminated,
- persons who arrange for treatment or disposal of hazardous substances, and
- transporters of hazardous substances.

Few exemptions exist within CERCLA's liability scheme, and court interpretations and decisions have exacerbated concerns of liability risk for certain parties.[36] To a lesser extent, other federal environmental laws add to the uncertainty about liability, along with state Superfund and other property cleanup and transfer laws.

Within this legal framework, any association with a hazardous waste site implies some level of uncertain liability. This real or perceived threat of liability often deters interested parties (especially lenders and developers) from undertaking any transaction necessary to clean up and redevelop a brownfield site. There are few assurances available at the federal or state level to protect a private party from enforcement action at a hazardous waste site, although some EPA and state voluntary cleanup programs have begun such initiatives.

Financial Issues

Even if technical and legal uncertainties are solved, assessing and cleaning up contaminated brownfield sites can be expensive and can limit redevelopment of these sites. Brownfield sites are often categorized in three ways:

- economically viable sites where market demands will promote redevelopment and even cleanup if necessary;
- sites that have development potential with incentives or financial assistance for assessment and cleanup; and
- sites that have extremely limited market potential, even if they were cleaned up.[37]

Financial issues are particularly complicated at brownfield sites because of the ultimate costs of assessment and remediation, the risk of liability, and limited public and private resources.

Hazardous waste cleanup costs are often uncertain and unusually high. Though data is limited on cleanup costs at brownfield sites, reports range from tens of thousands of dollars to millions of dollars. Even estimating the cost of remediation and development can require a site assessment that may be too expensive for smaller, less valuable sites.[38] Even the most thorough site investigations cannot guarantee an upper bound to remediation costs. Some stakeholders discover additional contamination during remediation, adding to the project cost.

Another financial barrier to brownfield cleanup is the uncertainty arising from the real and perceived risk of liability for cleanup costs. Since many stakeholders don't know what liability they can incur if they become involved at a brownfield site, they are often reluctant to become involved at

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[35] All liability requires proof of a causal link between a party and the harm. *Strict liability* means a party does not have to be found negligent in order to be found liable. *Joint and several liability* means that any single responsible party can be required to pay for all the cleanup costs at a hazardous waste site, even if other parties contributed to the contamination. *Retroactive liability* means that parties can be held liable for contamination that occurred before the law was passed.

[36] One case that is often cited is U.S. v. Fleet Factors Corp. (901 F2d 1550, 11th Cir 1990), in which the court found that a lender could be held liable for cleanup if the lender participated "in the financial management of a facility to a degree indicating a capacity to influence the corporation's treatment of hazardous wastes."

[37] Chicago Brownfields Forum participants also recognized an additional type: "currently operating sites that are in danger of becoming brownfields because historical contamination discourages new investment and lending." This is discussed in Chicago Brownfields Forum, "Initial Report of Workgroups Review Draft," Mar. 31, 1995.

[38] Phase I Site Assessments cost $1,000 to $5,000, while Phase II Assessments average $50,000 to $70,000.

all. Lenders are especially hesitant to make loans on properties where hazardous materials were once handled or will be in the future,[39] and developers fear they may be held liable for cleanup costs. The prospects of working with contaminated property as collateral in cases of foreclosure or bankruptcy dampen interest in brownfield activity.[40]

Finally, there is an apparent lack of public and private resources available to promote brownfield cleanup and redevelopment. While some states provide financing mechanisms, such as public grants, low-interest loans, and tax incentives, these resources remain limited as brownfield sites continue to be identified and left unaddressed.

Community Concerns

Brownfields do not exist in isolation. Brownfield property is often located in distressed communities and in close proximity to other businesses, retail districts, or residential areas. A brownfield site may attract illegal dumping, and if left unsecured and open to the public, can turn into makeshift playgrounds for neighborhood children or temporary shelter for the homeless. Thus, contaminated brownfields pose a threat to human health and the environment. Even uncontaminated brownfields are usually unattractive, and can lower property values in the area. Brownfields may also result in increased insurance rates for neighboring properties.[41]

While community groups are usually interested in promoting the cleanup and redevelopment of brownfields in their neighborhoods, they expect some assurance that remediation will protect their health and the environment. The public's concern includes protection during the cleanup, as well as at the final remediated site. When considering the prospects for site redevelopment, community members have a stake in the use planned for the property. In a few recent cases, concern about the potential for new jobs and economic development of a neighborhood brought forward numerous groups interested in being included in the decision-making process.[42] Thus, communication between the responsible parties and community members about the risks at a site and the plans for its redevelopment may prove essential to the success of a project.

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[39] Survey results of the Independent Bankers Association of America showed that one out of five of its members reported a mortgage loss or default on commercial property as a result of contamination on the site. In addition, seven out of 10 banks reported that they will not offer certain classes of loans due to environmental liability concerns. James Boyd and Molly K. Macauley, "The Impact of Environmental Liability on Industrial Real Estate Development," *Resources,* No. 114, Winter 1994.

[40] However, new Community Reinvestment Act (CRA) regulations (60 FR 22156, 22160) recognize loans for financing the cleanup or redevelopment of industrial sites in low- or moderate-income communities as credit toward meeting the act's requirements. This could help expand lender involvement at brownfield sites.

[41] A. Siewers, "The Building Blocks of Ruin," *Chicago Sun Times,* Mar. 14, 1993.

[42] Cara Jepsen, "Retooling South Works," *The Neighborhood Works,* March 1995.