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Brownfields: Supply and Demand

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Strategies need to be devised to increase the demand for and redevelopment of brownfields.

One of the main questions concerning brownfields is how much market demand exists for them. Determining the supply of brownfields directly affects state and local spending policy and local land use planning. By

measuring real estate market supply and demand trends as well as the factors that determine the reuse potential of brownfields, public and private sector officials can devise strategies to increase the demand for and redevelopment of brownfields.

Nonetheless, some communities apparently feel a strong reluctance to develop or maintain brownfield registries. Municipal brownfield coordinators avoid locally generated lists partly because property owners do not want their lands stigmatized. Although big-city brownfield managers (e.g., those associated with economic development or planning) have made substantial efforts related to brownfield site assembly and financing, they appear hesitant to acknowledge publicly the magnitude of the problem, making citywide planning for brownfield redevelopment difficult. According to British brownfield redevelopment expert Paul Syms, these attitudes parallel those in the United Kingdom, where an ambitious brownfield registry was envisioned in the early 1990s and then abandoned after several years due to widespread local resistance.

What are the resulting implications for the large supply of urban brownfields and the modest demand for inner-city land in cities such as Cleveland, Detroit, Milwaukee, and Chicago, which appear to be operating in an information void in terms of market intelligence about brownfields?

Demand for Urban Land

An analysis of demand for central city residential, industrial, and office land was conducted by the authors in conjunction with the Great Lakes University Environmental Finance Center at Cleveland State University in 1996. The past five years of absorption for these land uses was examined, and a central city share estimated for the next five to ten years based on a continuation of past trends. Another more aggressive scenario in which the central city share of regional growth was assumed to increase by about one-quarter due to implementation of state voluntary brownfields programs was also prepared.

The square footage estimates were then converted to acres to be compatible with brownfield supply. This represents net, new demand for land.

The demand for central city land was generally in the range of hundreds rather than thousands of acres over a five-year period. Demand for nonresidential urban land ranged from 200 to 500 acres in Cleveland and Chicago, 200 to 400 acres in Detroit, and about 300 acres in Milwaukee. If net, new demand for central city housing is included, the total acreage needs increase to 400 to 900 acres in Cleveland, 200 to 500 acres in Detroit, and 500 to 900 acres in Milwaukee. Chicago, which has a substantial central city housing, market, would require more than 1,600 acres over the next five years.

Brownfields fall into two broad categories: listed and unlisted sites. A compilation of listed sites, including those on NFRAP (no further remedial action planned) and CERCLIS (comprehensive environmental response compensation liability information system) lists, is available to all communities from the U.S. Environmental Protection Agency (EPA). Another list, for LUST (leaking underground storage tanks) sites, also is available to all cities from state sources, although size data for these sites are not generally available. A compilation of unlisted brownfield sites was developed by GLEFC (Great Lakes Environmental Finance Center at Cleveland State University, Levin College of Urban Affairs) for Cleveland and Cuyahoga County based on local tax assessor records. Milwaukee also has developed an extensive but narrowly defined list of brownfield sites.

Brownfield Supply in Central Cities

The city of Cleveland has not generated a list of brownfields, although an effort is currently underway by the Cuyahoga County Planning Commission to develop a computer mapping database of available property, including brownfields. The listed sites in the county include 172 NFRAP and 50 CERCLIS sites, averaging eight acres each. Of these, 134 known U.S. EPA, CERCLIS, and NFRAP listed sites are in the city. The county contains 1,800 LUST sites, averaging 0.1 acre, of which 363 are in the city. The total acreage of listed sites in the city is 1,108 acres.

Unlisted brownfield properties are likely to be contaminated from earlier uses. Sites can include all vacant industrial land in the city (no virgin land); all vacant commercial land in the city (again, no virgin land); vacant industrial land in the suburbs that is more than two years property tax delinquent; all municipally owned landbanked lots (formerly residential) that have gone through property tax foreclosure (all contain construction and demolition debris and may have buried asbestos and/or lead); standing industrial buildings of extremely poor (or worse) quality, according to auditor records; commercial buildings classified as automotive or dry cleaning establishments in very poor condition; and the above buildings in fair or poor condition where the ratio of land to building value is less than one and property taxes are two years in arrears.

Excluded as brownfield properties are vacant residential land under private ownership; landfills; municipally owned property greater than 0.15 acre; state-owned land (some Superfund sites fall in this category); standing commercial buildings not associated with automotive repair or dry cleaning; and standing industrial buildings of fair or better quality on which the owners are paying property taxes. Despite general knowledge of these larger sites, which often account for more than 30 acres each, no formal list is

believed to be available.

As for unlisted sites, the city of Cleveland contains more than 3,100 vacant parcels of industrial and commercial land on 1,400 acres; approximately 2,800 properties with substantially under used industrial and commercial buildings on 260 acres; and more than 7,200 formerly residential lots on 800 acres that have gone through the property tax foreclosure process and are in local public ownership. Of the 14,100 unlisted brownfield sites on 2,730 acres in the county, 93 percent of the sites are in the central city and account for 91 percent of the unlisted brownfield acreage.

In 1996, there were an estimated 3,600 acres of brownfields in the city of Cleveland, or 77 percent of the total brownfield acreage in Cuyahoga County and 88 percent of the total number of brownfield sites in the county. Sites over one acre, prime for industrial development, represent about 40 percent of all brownfield acreage in the county and 60 percent of all city brownfields.

The overall supply of brownfields is much greater than overall demand. The central city appears to have a 42-year overall supply of brownfields, assuming a continuation of past trends of overall market demand, including housing. The best-case scenario would reduce the volume to just under a 20-year supply. This is more favorable than the analysis of nonresidential supply and demand in the city, which had almost a 50-year supply of brownfields available to meet demand, with a 28-year supply under the best-case scenario. If only those properties larger than one acre are considered suitable for demand (generally, the industrial land market is strongest for sites with a three-acre minimum), then several thousand acres, mostly in smaller parcels with less desirable locations, may not be needed for redevelopment in our professional lifetimes.

Detroit has not prepared overall estimates of its brownfields. The total amount of listed brownfield sites in Detroit is estimated to be 841 acres. Data on unlisted sites is more difficult to estimate. Local brownfield planners are developing a geographic information system (GIS) that may be capable of generating brownfield estimates within a year, but no total figures are yet available. A U.S. Conference of Mayors study conducted in January of 1996, however, cited 2,500 industrial brownfield sites in the city of Detroit. Detroit brownfield planners indicate that the typical size of an industrial parcel in the city is two to three acres. A conservative estimate of industrial brownfields (excluding formerly residential property) in Detroit would be 5,400 acres.

Milwaukee has developed and is maintaining an ongoing list of brownfields, but because it excludes properties that are paying property taxes, its definition of brownfields is narrow. The total volume of listed brownfield sites is estimated to be 439 acres. Milwaukee's tax assessor has developed a database for brownfields based on property tax records. It features a "do not acquire" (DNA) list that combines tax-delinquent properties with those believed to have environmental contamination. As of mid-1996, the DNA list (which is updated frequently) contained 489 properties, averaging 0.48 acre apiece. The known brownfield sites in Milwaukee total 600 acres, excluding residential properties.

Chicago has not developed a database of brownfields. The total volume of listed brownfield sites in Chicago is estimated to be 1,843 acres. Data on unlisted sites are more difficult to estimate. No total estimates of brownfield sites or acreage are presently

available. The U.S. Conference of Mayors study, however, cited 2,000 industrial brownfield sites in the city of Chicago. A conservative estimate of industrial brownfields in Chicago, excluding formerly residential property, would be 5,200 acres.

The estimate of nonresidential brownfield sites (all publicly listed sites plus formerly industrial and commercial sites) ranges from a low of 600 acres in Milwaukee to more than 5,000 acres in Detroit and Chicago. Cleveland's nonresidential brownfield acreage is estimated to be 2,800. These estimates are considered the minimum for 1995 to 1996.

If past market demand for industrial and office land continues, it would take more than 150 years to absorb all the brownfields in the city of Detroit. The best-case demand scenario, which assumes a strengthening of demand for brownfields based on new state laws, still leaves a 77-year supply of brownfields. Neither of these figures addresses residential brownfields converted to industrial use or the location or suitability of the sites (in terms of minimum viable acreage) with respect to demand.

Overall, the range of oversupply in the four cities is extremely large, from over 150 years for Detroit to ten years of supply of land under Milwaukee's narrow definition of brownfield. According to the best-case scenario, the four cities overall account for a 30- to 70-year supply of nonresidential brownfields relative to market demand.

Policy Implications

What should be done with brownfield properties that are in demand? How should cities deal with sites with no foreseeable demand? And how should surplus brownfield sites be regulated, if at all? Cities with foresight should plan to hold surplus land for an interim yet beneficial use such as parkland, golf courses, or other public purposes. This strategy would require federal and state EPA and other environmental regulators, real estate investors and lenders, and local land use planners to respond by facilitating the stabilization and redevelopment of these lands. Such actions are needed because many of the state voluntary cleanup programs focus only on projects with economic development potential, which are very different from these surplus lands.

The nation's and many local jurisdictions' lack of a comprehensive total acreage estimate of brownfields provides policy makers in other arenas with the ammunition both to cast doubt on the magnitude of the problem and to direct funds and public attention to their favored programs, reducing the ability of state and national brownfield policy makers to obtain funds to support redevelopment of these contaminated urban lands. On the other hand, property owners do not want their parcels stigmatized by inclusion on a list of suspected contaminated sites. However, if and when brownfields come up for sale or redevelopment, any lender is likely to require an environmental audit, likely causing the information to be revealed anyway.

Further, the U.S. EPA has recently listed CERCLIS sites, classifying them as NFRAP, and transferring them to state oversight. The excess of brownfield sites relative to demand indicates that available state and local funds should be directed to making the most viable brownfields more competitive. Funds could be allocated to site assessment and

remediation, improvement of road infrastructure, and parcel assembly.

Many surplus brownfield sites may sit for decades or even longer before they are redeveloped, if they are at all. Although many states have implemented voluntary cleanup programs oriented to redevelopment of potentially economically viable brownfield sites, these states often lack environmental standards for long-term interim uses, such as active and passive parkland, buffers, and community gardens. It is likely that many brownfields could end up in these land uses over the next several decades. As a result, brownfields policy should be integrated more closely with policy initiatives for social programs, land use planning, and economic development.

Federal and state environmental regulators could initiate the following:

- Improve the accounting of the overall acreage and number of brownfields sites in a way that does not threaten local brownfield developers. Assessing the redevelopment of NFRAP sites over time could be worthwhile.
- Create more user-friendly and specific cleanliness standards for long-term interim uses such as permanent hold/landscaped buffer space, active and passive parkland, and community gardens.
- Educate local brownfield coordinators in state-of-the-art analysis techniques that include regulatory issues, supply and demand analysis, local land use planning, and successful redevelopment cases.

Real Estate Financial Community

Real estate investors, lenders, and developers are primarily interested in economically viable brownfield sites. Indeed, the presence of surplus brownfield sites is likely to depress the price of potentially viable sites, making their redevelopment more difficult. Because the demand for redevelopment sites is relatively low and the supply of sites so large, brownfields constitute a buyer's market. Owners of potentially viable industrial brownfields would probably prefer to see nonviable sites designated for other land uses, which would have a positive effect on the sales price of developed industrial lots after remediation.

Higher redevelopment costs for brownfields compared with noncontaminated sites imply a similarly higher cash flow stream to meet normal real estate industry returns. Thus, higher-density redevelopment projects have a better chance of producing an adequate bottom-line profit for real estate investors. Lower-density projects are likely to require larger public subsidies or generate a lower rate of return. Identifying an end user (major tenant) in advance is pivotal to justify risking development capital or public funds on brownfields redevelopment because return on investment would be achieved faster and with more assurance.

With respect to financing remediation and redevelopment of brownfields, property appraisers in the United States have been generally reluctant to provide valuations of unremediated brownfields. This makes transfers of unremediated brownfields difficult because cleanup costs are not known with enough certainty early in the process. Without property appraisals, lenders are unable to determine a property value for the loan-to-value

ratio; therefore, any lending that takes place is usually based on a very low value, requiring more developer equity. Consequently, the financial return on the property looks worse and may hamper transactions and remediation on otherwise worthy brownfield sites. Innovations in the transaction process are needed. One solution may be a flexible strike-price real estate option, whereby the variation in the cost of remediation is shared by the buyer and seller of the property.

Another problem relates to the adequacy of lender collateral on brownfields. In a typical real estate deal, the real estate itself is the collateral for the lender in case of default. With brownfields, most lenders are reluctant to accept the real estate as sufficient collateral. Lenders who finance brownfields typically require a more creditworthy tenant or end user to stand behind the property. An alternative form of comfort for the lender is an indemnification letter from an acknowledged responsible party (e.g., energy company), usually the seller. Another aspect of the collateral issue is the effectiveness of the recently created covenants not to sue (CNTS), which are issued by states for remediated brownfields and protect property owners (and lenders if they foreclose) against liability for future environmental problems. Lenders would want to know if any had been reopened (e.g., the state had required additional clean up at a later date). In addition, risk based corrective action (RBCA) standards—which allow the new owners to clean up the property to a less-than-pristine standard suitable for industrial or commercial uses—are now in effect, but lenders would likewise be interested in how limits on the future use of the brownfield can affect its value if the lender is forced to foreclose.

Real estate investors, lenders, and developers should consider lobbying for the following:

- the appraisal of contaminated real estate that states a value for the property after remediation, with or without use limitations under RBCA; and
- an investigation of CNTS cases to determine how many were reopened. Track brownfield foreclosures to determine if RBCA limited future use of the property and had an effect on property value/collateral. Such an investigation could be accomplished in conjunction with the EPA.

The Development Potential

Local planners and development entities, including designated brownfield coordinators, play a major role in brownfield redevelopment. They should realize that many brownfields formerly used for industrial purposes will not be redeveloped within their professional lifetimes. Local municipal designation of these properties (e.g., zoning, and future land use) should reflect a realistic use. Failure to do so could result in lower prices for better-located and larger, potentially viable, brownfields, making their redevelopment more difficult. The ability of a brownfield to be assembled into an economically viable size is of prime consideration if the parcel is to have development potential.

Local planning and development organizations with foresight should consider the following:

- Generate critical mass to support viable brownfields redevelopment by focusing public investment subsidies and infrastructure funding in those areas with the

- highest redevelopment potential.
- Reclassify or rezone brownfields with limited or negligible development potential to reorient them from inappropriate property markets to more feasible end uses.
 - Determine the importance of positive externalities (positive effects beyond the brownfield property itself) of remediated brownfields devoted to low-intensity end uses on nearby property values. For example, eliminating blighted properties should increase nearby property values. These indirect benefits could be used to justify, limited public investment in nonviable sites for containing contamination and bringing in clean fill and landscaping.

Developers planning to acquire a brownfield should make sure the site is well located and sufficiently large to satisfy an end user. Look for savvy communities to help beef up funding and for road infrastructure in promising areas to stimulate industrial demand and create a critical mass for development.

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