

Accounting for Differential Neighborhood Economic Development Impacts in Site-Specific or Area-Based Approaches to Urban Brownfield Regeneration

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Urban brownfield redevelopment has recently emerged as both a major economic development and environmental priority in the U.S. (Bartsch, *et al.* 1991; U.S. Conference of Mayors 1996). In moving center stage, the "contaminated land problem" in the US has moved from a narrow definition as an environmental problem toward broader recognition as an economic development issue. By contrast, in the European Union, most of whose member-states legislated on contaminated land cleanup long after the US passed the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, or Superfund) in 1980, the problem has always been recognized as involving both economic and environmental considerations (Meyer, Williams and Yount, 1995).

"Land contamination" involves more than merely on-site pollution. The Environmental Protection Agency's working definition of brownfields (Kaiser 1998; ICF Kaiser and EP Systems Group 1998) describes them as "abandoned, idled or underutilized industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived contamination." EPA has specific land and water pollution in its sights in this definition, but the language incorporates an array of other factors retarding regeneration of previously used urban lands, most of which weigh more heavily in the U.S. than other industrialized countries: "contamination" by crime, by crowding, by old infrastructure — a new form of economic 'spillover,' this time from the public facilities to the private land values — and, given the undeniable presence of racism, by high concentrations of minority populations.

Unlike the physical problems caused by pollution on specific sites, these non-environmental elements of "contamination" are not amenable to piecemeal solution. The U.S. recognized this reality

fifty years ago, when it launched a series of urban renewal programs, nominally to combat physical blight, but effectively to remove undesirable populations (Anderson 1964; Bellush and Hausnecht 1967). However misguided the so-called “Negro Removal” programs may have been, they represented a recognition that the real estate appeal of individual sites cannot be transformed without also addressing their neighborhoods. In a modified form, more attuned to actual community interests and allowing for more bottom-up planning, the Model Cities Program, part of Lyndon Johnson’s “Great Society” and its War on Poverty, reflected the same recognition of the importance of area-wide approaches.

This insight, unfortunately, does not appear to have informed U.S. environmental policy over the past twenty years, in either the drafting or the implementation of CERCLA, which has always been focused on individual site-level contamination problems and remediation activities. This focus is reflected in - or may be perpetuated by - much of the writing on brownfields, typically characterized by case studies of individual development efforts with minimal attention paid to community effects. This myopic perspective was understandable early in the policy debate over the economic development effects of CERCLA (Cooney, *et al.* 1992). Given the breadth of debate and the range of state and federal policies with local area environmental conditions and economic opportunities, it is somewhat harder to accept in recent work. Yet the latest book-length contribution to the literature, Simon’s 1998 volume for the Urban Land Institute, defines the brownfield problem specifically in terms of pursuit of “highest and best use” values for individual sites, not as a community development issue.

Much brownfield discussion in the United States thus seems to be wedded still to concern for individual sites and property values. By contrast, environmental, economic, and perceived social problems have tended to be addressed simultaneously, in a coordinated manner and with a broad area-based approach in Europe. This pattern is starkly evident, whether one looks at policies in Germany’s Ruhrgebiet (Kunzmann and Hennings 1993), the heavily public-sector-led Dutch national development plans (Netherlands Ministry of Housing 1994; 1996), or the avowedly pro-private-market approaches of the British Urban Development Corporations (Imrie and Thomas 1993).

One explanation for this difference is the much greater supply of “available” greenfield sites in the US than in the EU. From a national economic development perspective, there has been a far lower *need* to redevelop brownfields in the central cities and inner suburbs of the US than in Europe, albeit there might be equal need for environmental mitigation due to health or eco-system threats. Europe has far greater pressure for dense urban development due to its smaller quantity of land per capita; this relationship is exceptionally clear in the nations with rapid population growth combined with extremely limited land area, such as the Netherlands (de Roo 1997), or in the few cases of massive central city brownfield zones, such as characterized London’s Docklands (Brownhill 1990). It follows that any shift in the U.S. interest in brownfields regeneration should be explainable in terms of a new emphasis on the reuse of urban sites. The fact that New Jersey, the most densely populated US state, was also the first to implement state-level programs to facilitate cleanup and reuse of brownfields attests to the strength of this argument.

There is some recent US evidence of real efforts at the national level in pursuit of just such goals in an array of urban redevelopment efforts. One obvious example is the Clinton Administration’s Empowerment Zone/Enterprise Community program (Pepper 1997; Porter 1985). At the state level, geographically-targeted economic development programs emerged first in the

explosion of state enterprise zones, most of which have symbolic, not real economic, value to developers (Meyer 1991). Specific area foci more recently have taken root in broader programs to support individual investments in targeted economic areas that are, more often than not, linked to zones of known brownfield concentrations (Bartsch, Collaton and Pepper 1996). Local efforts to limit sprawl and promote downtown land reuse and redevelopment are accelerating as well, due in no small part to the requirements of the Clean Air Act, with which many central cities find themselves in “non-compliance” and the potential for pollution reduction associated with reduced commuting distances (cf: City of Minneapolis 1994; Environment and Development Seminar 1994; City of Chicago 1995).

Logically, if the objective of public brownfield policies is more than contamination removal and incorporates a broad economic development mission, then the standard by which projects are selected for public sector support need to go beyond pollution mitigation on individual sites to consideration of the developments’ impacts on their neighborhoods (Foxen and Knauerhase 1995). This necessity has yet to be well understood in the U.S., in which the widespread European commitment to area- or neighborhood-impacts has not been a characteristic of most brownfield reclamation efforts. Neither the Environmental Protection Agency’s Brownfield Pilot Projects (BPP), now numbering close to 200, nor its 24 Brownfield Cleanup Revolving Loan Funds (BCRLF) required any consideration of off-site economic impacts in the municipal grant applications.

This paper will first elaborate the priorities and premises characterizing site-specific and area-based approaches to brownfield redevelopment, using the states’ varying approaches to implementing Voluntary Cleanup Programs (VCPs) as the basis for comparison. Next, we use these evident differences to systematically distinguish the key elements of variation across the methods of, and evaluative criteria for, site-specific and area-based regeneration. We then turn to the implications for policy-making, planning, and public sector funding of the explicit consideration of neighborhood effects in project selection before concluding with observations on the potential economic development consequences of application of the broader perspective to public sector brownfield project site selection.

I. Site-Specific and Area-Based Regeneration Efforts: State and Local Examples

The differences in approach to redevelopment and assessment of project success between site-specific activities and those oriented toward area-wide regeneration are evident in the array of state Voluntary Cleanup Programs (VCPs) that have emerged in past decade in the U.S. The bifurcated approaches reflect the ambiguity of the EPA contaminated land policies to which the states were responding.

The EPA approach initially emphasized exclusively the reclamation of polluted sites; concern for the economic development effects of high remediation standards is a relatively recent policy shift. The balancing act, relating environmental and human health protection to economic development consequences, is now well understood at the Agency, and reflected in the policy on EPA signoff for Prospective Purchaser Agreements (PPAs):

“The Agency intends to carefully weigh the public interest considerations of creating jobs in the inner city ... against the possibility of further environmental degradation of industrial property in mixed industry/residential areas.” (USEPA 1995: 5)

With respect to such agreements, moreover, “the surrounding community and other members of the public should be afforded opportunity to comment on the settlement...” (USEPA 1995:7) There is thus some indication, however weak, that the EPA is concerned with area- and community-wide impacts, not just the returns on redevelopment of a single site.

This emphasis varies tremendously across the states, their cities, and their programs in support of redevelopment of brownfield sites. Some states appear to have pure site-specific priorities, while others lean toward community or area impact primacy, to the extent it is possible when on-site investment requires sufficient private returns on investments. A sampling of state and municipal statements regarding program eligibility, application procedures or criteria for project selection illustrates the diversity of approaches.

Bridgeport, Connecticut has developed what may be most complex system used by a municipality for assigning priority rankings to its brownfield sites. The city uses a complex multi-page form with a variety of factors, each assigned a particular weight for the overall formula and a score based on the features associated with each site (Bridgeport ND). The scoring table integrates site characteristics, neighborhood features, and known on-site environmental conditions. Among the “redevelopment characteristics” included are: Neighborhood Characteristics and Location (in an Enterprise Zone, Redevelopment Area, Economic Development Program Area and/or Empowerment Zone). Bridgeport’s rationale for inclusion of these elements, however, relates exclusively to the effect these factors may have on the costs to developers to reclaim and redevelop an individual site. Neighborhood characteristics are deemed important in terms of investors’ willingness to attempt projects in the area, and the location factor is described in terms of potential developers’ eligibility for public financial support for their projects. Thus the priority is site redevelopment potential, with little concern for the neighborhood effects of any redevelopment, so long as property values on site can be raised.

The Commonwealth of Massachusetts appears to share Bridgeport’s concern for individual sites in its voluntary cleanup program. Remediation plans prepared by developers are overseen under state law by private engineering contractors that operate with a site-specific focus. Brownfield remediation efforts are undertaken by

“...property owners [who] hire private environmental professionals licensed by an independent state board... to evaluate site conditions and oversee response actions.” (Massachusetts Department of Economic Development.1997: 2).

There is no mention in the state policy or guidance to oversight agents or developers of need to consider adjacent site uses or other off-site considerations. When it comes to financial assistance, however, the state shifts its orientation, however minimally: such aid is only available to expanding businesses operating in designated “Economic Opportunity Areas.” These zones, presumably, are areas in which some broader positive impacts from the specific on-site redevelopment are expected (Massachusetts Department of Economic Development.1997: 4).

Another northeastern “rustbelt” state takes a somewhat more area-directed approach. Under the VCP, four different remediation standards are available for developers (Pennsylvania Department of Environmental Protection 1997). The two less stringent cleanup standards require specific public notice and allow for area-wide issues to be raised and addressed, but otherwise the focus is strictly on site-specific considerations. Where such notice is given, review and comment are provided for, but there still is no required standard of off-site impact to be met for eligibility for state oversight of a cleanup plan.

Pennsylvania is more explicit than Massachusetts in its concern for area-wide value for investments in its financing schemes. Applications are accepted for grants from public bodies and economic development agencies and loans to any party pursuing site assessments and/or remediations on brownfield sites. Guidance materials make it very clear, however, that funding decisions are based on factors including whether “... projects which are local or regional development priorities ... [and] ... the financial or economic distress of the area in which the project is being conducted.” Applicants are instructed to provide: “A narrative description of the project, including the planned future use of the site or the potential for reuse, and *the strategic economic importance of the site.*” (Pennsylvania Department of Community and Economic Development 1997: G-7, G-8, emphasis added).

While at least as desperate for new investment and regeneration of sites in its decaying urban cores as Massachusetts or Pennsylvania, Michigan shows much more explicit concern for area impacts of new economic activities in its approach to funding site reclamations. Grants and loans are available to local governments and are in general evaluated for both economic and environmental impact. Grant applications, in particular, are examined for “Utilization of existing infrastructure [and] potential for environmental contamination resulting from the new development.” (Michigan Department of Environmental Quality 1998: 1). The first factor addresses public sector efficiency and the need to avoid unnecessary infrastructure investments to promote development when underutilized facilities exist. The second appears to represent a concern for environmental justice and community well-being, and reflects some desire to avoid new environmentally-damaging forms of economic activity, whatever the private returns on investment they may provide. Both these criteria bespeak a clear area-orientation absent in the less explicit policies of the northeastern states.

Wisconsin and Minnesota, Great Lakes states like Michigan but less burdened with as pervasive an industrial legacy and as high a volume of brownfield sites, go substantially further in involving community impacts. Both states have programs of assistance to municipalities dealing with brownfield legacies and both demand active participation by their local governments in demonstrating need in terms of area-wide impacts.

Wisconsin will conduct site assessments for municipalities on publicly owned or tax delinquent properties under its program. Thus the program is focused on sites that have already entered the realm of public concern. In a section relating to “Redevelopment Potential,” the applicant municipality is asked to respond to the following questions:

“Why is it important to the community to have this property redeveloped? Include things such as crime statistics, unemployment rates, average household income, and other demographic or statistical data of [sic] the community. ...

“What are the municipality’s specific concerns regarding the property (public safety, trespassing, soil or groundwater contamination, ... “ (Wisconsin Department of Natural Resources. 1997: 6)

Clearly, these questions address off-site considerations and area impacts that the local government sees as significant to its redevelopment efforts.

Minnesota conducts formal ranking for prioritizing projects. It identifies six distinct eligibility criteria. These include, first, tax base increase, second, social value (measured by expected job creation), third, “reduced threat to public health and the environment” (as measured by the state’s environmental agency), and, sixth, “Commitment of local municipality to pay for the local match” (Minnesota Department of Trade and Economic Development. 1998:1). The last element is arguably the most important since the program requires a 25% local cash match for the state grant in aid, whether the aid is requested for site assessment or for execution of a site remediation plan. The state thus appears to be relying on the municipality’s willingness to spend its own money as a measure of the extent to which redevelopment of any one site is perceived as providing public benefits to the community as a whole.

Once we turn from states with major brownfield legacies to those with more limited quantities of contaminated sites, or those less immediately concerned with regeneration and specific on-site job creation, area-wide concerns can carry even more weight. In Oregon, for example, state willingness to provide prospective purchaser protection with an agreement requires that “substantial public benefit” be generated as a result. The statutory definition of such benefits includes

“whether human health and environmental risks are being addressed ... [and] economic and social benefits such as job creation or retention, creation of conservation or recreation areas, and revitalization of idle property ...” (Oregon Department of Environmental Quality. 1997:2)

The heavy weight given to area impacts beyond the site- and purchaser-specific factors in negotiations on such agreements is made very explicit in the guidance document:

“... DEQ [will] consult with affected land use planning jurisdictions and consider reasonably anticipated future land uses at the facility *and surrounding properties...* to determine whether the purchaser’s proposed use is consistent with *the land use plans for the area.*” (p. 4, emphasis added)

Oregon clearly takes into consideration area impacts beyond the simple avoidance of new pollution evident in the Michigan policy, or the local government community economic development concerns in the approaches evident in Minnesota and Wisconsin. Quality of life and community amenity factors are given equal weight with economic concerns in the context of the diversity of perspectives and wide public participation that characterize most land use planning processes.

II. Key Differences Between the Two Approaches to Redevelopment

Unsystematic review over the past five years of myriad case studies of local and state urban regeneration programs and efforts that combined economic and environmental concerns, combined with more systemic comparisons of programs in different countries, suggests the possibility of distinguishing the methods and evaluative criteria of site-specific and area-based approaches. We summarize these differences in Table 1. (Empirical bases for the Table can be found in Meyer, Williams and Yount 1995, U.S. Office of Technology Assessment 1995, Bartsch, Collaton and Pepper 1996, Meyer 1996, and Urban Institute 1998). The recently launched major effort of the British government to learn from experience to date about the most efficient means of regenerating urban areas has produced what may be the starkest explication of the differences (Urban Task Force 1998). The Table really displays tendencies, not absolutes, but the differences between the two approaches are clearly substantial and warrant careful attention from policy analysts and planners. We can address differences in program objectives, in methods employed, and in the criteria utilized for evaluation of the success or failure of the efforts.

The distinctions that can be made with respect to objectives are in some instances ambiguous. What we really see is a significant difference in emphasis or the weight given to different components of what is clearly a complex multi-dimensional goal. When we divide the objective function into three gross dimensions, environmental, economic, and community, the differences become clearer:

- (1) environmental objectives are limited to those with immediate economic consequences in a site-specific program, while ecological and even bioregional concerns can enter into an area approach;
- (2) economic objectives parallel the spatial focus, so off-site economic consequences - spillovers and externalities, and their associated opportunity costs - are of little concern in a site-specific focus, but relevant to the area-based efforts; and,
- (3) community objectives, while vaguer than the other two, clearly are far narrower for the site-specific approach (although the aggregate effects of successful redevelopment using this approach for a large number of sites in a neighborhood would tend to arrive at the objectives of the area-based regeneration in a community).

Perhaps the starkest difference and most difficult element of objectives to reconcile between the two approaches is the degree of community consultation and the role played by the local community in shaping specific program objectives. (We must, however, acknowledge that extensive consultation does not always result in real community influence or power over objectives and plans.) The difference in logic here - that the site-specific approach sees the redevelopment problem in private, not public, terms, by and large, and thus seeks to avoid consultation - anticipates the very significant differences in both methods and evaluation that are evident in the Table.

With respect to methods, the site-specific approach clearly shows market reliance and a tendency to avoid public sector involvement unless absolutely necessary. A recent study of brownfield redevelopment entrepreneurs - risk-takers using venture capital to remediate and redevelop highly contaminated sites in prime markets - indicated, for example, that these innovators would not even attempt projects on publicly owned land (Lyons and Meyer 1997). These observations suggest that there is a limit to the utility of public sector site assembly efforts in the US context: while larger sites created from parcel assembly may have broader market appeal, this

class of exceptional risk-takers and their financiers may eschew the new sites because of the public participation. On the other hand, site-specific efforts have always relied substantially on direct financial subsidies - and state Voluntary Cleanup Programs introduced to facilitate reuse of brownfields increasingly incorporate some site- or developer-specific financial aid component from the outset.

The alternative approach - public investment in infrastructure, public facilities provision, improved government services to an area or other private-public collaboration for spatial transformations - seems to be overlooked in site-specific planning for redevelopment, despite the cost savings to operators on the target sites associated with improved roads or utility services, better street lighting or police protection, and the like. The myopia engendered by the site-specific focus has led the Brownfields Working Group in Louisville, KY, for example, to overlook the effects of brownfield regeneration of major investments in public housing developed for sale, and associated market-rate homes developed in one depressed part of the city on the economic potential of - and thus developers' interest in - brownfield sites close to the new housing. The off-site investment has made previously unattractive sites valuable for possible retail locations (Meyer 1996-98). The UK Urban Task Force espouses a different agenda, and thus offers an alternative approach:

“Unlike the USA we anticipate that the majority of regeneration will be undertaken through a partnership of the public and private sectors *aimed at delivering ‘sustainable’ communities* in inner city areas that have fallen in to disuse.” (Dudman 1998, emphasis added)

Finally, we can turn to differences in the evaluative criteria - the measures of success - that apply to the two approaches to redevelopment. The differences are obvious - and flow directly from the objectives and the methods associated with site redevelopment and area regeneration. Time horizons differ - mainly because an area approach is intended to generate multiplier effects that may evolve slowly, while site redevelopers' time horizon extends only to the date of sale of the remediated property. Different perspectives on public sector roles, evident in the objectives and methods, lead to divergent definitions of policy efficacy, efficiency and effectiveness. The details of these differences and the implications for planning, and resource allocation of more explicit consideration of neighborhood effects are the focus of our next section.

Table 1

Objectives, Methods and Evaluative Criteria for Site-Specific and Area-Based Development Efforts

<u><i>Objectives</i></u>	<u><i>Site-Specific Redevelopment</i></u>	<u><i>Area-Based Regeneration</i></u>
General Environmental Objectives	Reduced Human Health Risks, Liabilities	Better Regional Environmental Conditions
General Economic Objectives	Tax Base Increase; Job Creation On-Site	Improved Area-Wide Attractiveness to Capital
General Community Objectives	Removal of Eyesores and Abandonment; possibly local- and home-ownership	Reduced Community Disamenities and Specific Economic Improvements
Actual Consultation on Local Community Objectives	Minimal; as required by law with respect to community notice and consultation	Potentially extensive; (although development agency may listen but not act on local concerns)
<u><i>Methods</i></u>		
Lead Actor(s)	Private Developers	Public Agencies and Quasi-Public Authorities
Public Site Assembly, Preparation	Minimal - minimum necessary	Potentially Extensive - to achieve area change
Public Support Mechanism(s)	Direct \$\$ Subsidies; Site Rezoning	Complementary Investments, Planning Changes
<u><i>Evaluative Criteria</i></u>		
Time Horizon	short - completion of onsite development	long - allowing time for expected spillover effects
Policy Efficacy	sales for cleanup and reuse generated; impact on site values and tax revenues	new capital flows into area; increase in area economic activity, incomes, and property values
Policy Efficiency	minimum public sector expenditure	maximum leverage on public funds
Policy Effectiveness	rate at which private landowners market contaminated sites for reuse successfully	increase in area economic activity, household incomes; reduction in area disamenities

III. The Policy Focus, the Role of the State and the Criteria for Success

We face a dilemma in this section - with three elements, we cannot speak of the problem of “which came first, the chicken or the egg?” Yet the sequencing problem is real. The three issues are linked, and, depending on context, a given program on the ground may have emerged from strong articulation of any one of them by a politically active and power body. On one level, this section might simply replicate much of the argument previously articulated by critics of the growth machine and the “urban regime” theorists (Logan and Molotch 1987; Stone and Sanders 1987). More important to the task that we have set ourselves however, is discussion of the ways, and extent to which, application of inappropriate evaluative criteria to particular policies can undermine the potential of any approach and the commitment of a local government to pursue the development strategy in question.

Measurement shapes perception - and thus choice of actions. This observation can be found in the literatures of accounting, program evaluation, and economics, among other fields, but it is too often overlooked in discussions of key aspects of planning. If the most readily available measures of the impacts of land use and zoning controls are changes in land values, then decisions on such regulations will tend to be based on expected changes in assessed valuations, appraisals, or sale prices. Capital flows into an area, business start-ups and expansions in the area, incomes accruing to its residents, and even local population changes themselves are harder to measure (or are measurable only after substantial delays). Faced with pressure for rapid action and immediate justification for decisions made, it is not surprising that planning commissions have tended to rely on property value changes as the measures of their “success.”

It is clear that land value impacts do not capture all the effects of land use decisions - or economic development subsidy allocation decisions. None of the measure enumerated above, mostly ignored in planning decisions, begin to address the issues that are conceptually central to spatial economic analysis. Academic economists and regional planners themselves tend to overlook their own core theoretical concepts simply due to the measurement problems they pose, so it is to be expected that these considerations are ignored by policy-makers. Consider:

- *Opportunity Costs.* Success measures based on observed changes cannot incorporate the “what if” considerations that enter into opportunity cost calculations. The logic is simple, but measurement is exceedingly difficult. On a single site, an investor can be expected to consider all possible redevelopment alternatives and to chose the one that provides the greatest possible return on investment; this is the basis for the determination of the “highest and best use” of the site. However, the use that maximizes the profits on a single site may preclude economic uses of nearby or adjacent sites and thus force a community - the local economic area - to accept an aggregate pattern of land uses that limits a range of preferable alternatives. (The fact that the single site investor may face opportunity limits imposed by constrained financing raises a further question about the role of the state in development efforts, since public support for a project may permit attainment of a higher use for a single property - or may channel the use of that property towards an alternative that reduces the limits on community goal-attainment for an area as a whole.)

- *Spillovers and Externalities.* Private developers are not generally expected to consider the effects of their decisions on other properties or on the area in which they invest. The private investment decision is expected to be market-driven, and there is little incentive to internalize the costs of external effects. Zoning and land use controls may be viewed as constraints imposed, using the police powers of the state, to limit the negative spillovers of a development project on a neighborhood or real estate market area. However, there are no good mechanisms for incorporating positive externalities into the private development decision on a single parcel. Thus a series of individual site-specific decisions on highest and best use cannot be expected to produce as high a level of economic (and social) benefits to an area as might be anticipated from an area approach. The real problem lies in the inability of planners and other decision-makers to accurately measure either the negative or the positive spillovers of any particular redevelopment decision. Gross assessments may be possible (as in many areas' conclusions that "if we accept low level nuclear waste disposal in this county, it may cost us other types of local investment"), but actual dollar findings on financial returns for an area of development alternatives are virtually unattainable. Measurement of community social and other non-financial impacts that might be shaped by an area-based approach presumes some consensus on the types of effects that are important to the area - and on the value to be placed on alternative effects.

- *Substitution Effects and "Additionalty."* From a public perspective, the value of new economic activity on any one site must be balanced by potential declines in similar businesses on other sites in an area. That is, a new shopping center, for example, may create jobs and sales on a specific site - and earn the developer a substantial positive return - but may provide no net gain for the area, if sales and employment in other retail establishments decline with the opening of the new center. This specific form of spillover is more measurable than those just discussed, since sales cannot be expected to increase without a net increase in local incomes - and spending capacities. However, some new economic uses of land may bring new flows of funds into an area, thus expanding the overall market, and may produce more of what the British refer to as "additionalty." The potential for any given new land use to add to a local economy is a speculative calculation, and claims of new activity can only be verified *ex post*, through surveys or other data collection. As a result, Pennsylvania, to cite one example, limits many of its economic development subsidy programs to manufacturing business and is extremely reluctant to provide any state aid to retail projects, based on the presumption that sales volume will simply migrate from one location to another.

If the economists and regional planners cannot deal systematically with these effects, it may be too much to ask of policy professionals to expect them to measure such impacts.

But planners still have to make decisions, and the emphasis placed on different criteria for success shapes the policies promulgated and plans implemented. The simple default approach is to rely on the market, since financial considerations and profitability provide an irrefutable finding on private economic viability. Such a reliance clearly implies a site-specific orientation to the redevelopment policy conundrum, and it greatly simplifies the decision-making process, not in the least undermining the legitimacy of claims made about the need for public hearings and other forms of community participation. The results of such default, site-specific and market-based decisions are, however, logically bound to be inferior, in terms of aggregate economic and social impacts, to the potential outcomes of application of area-wide criteria for redevelopment project decisions. Whether

the broader framework actual produces superior results in practice remains subject to question, due both to the inadequacy of the data available for decision-making - and to the insufficiency of the data for evaluation of the policy impacts.

IV. The Potential Benefits of an Area-Based Approach to Brownfield Redevelopment

The inclusion of broader economic and social evaluative criteria for public sector planning and investment in brownfields redevelopment has obvious benefits to both the public and private sectors. These take both direct and indirect forms, affecting investment decisions on individual brownfield sites, but also shaping public policies and development efforts outside individual brownfields that can affect their market value.

For private investors, the direct effects may include greater willingness of the public sector to provide some forms of subsidy - or greater subsidies - to projects on individual sites with potentially broad public benefits. Since these benefits cannot be included in the private, profit-oriented investment decision, recognition of the potential gains may induce support that makes otherwise not profitable projects financially viable undertakings. Where area-based, thus public, criteria constrain development to particular forms of new land uses, there is an arguably strong case for increased subsidies. The public interest in constraining development options may justify provision of a sufficient subsidy to a project to permit the net private return on investment to be as high as would be realized had the private highest and best use been permitted.

The public sector direct benefits follow the same logic: an area-based perspective permits management of the local fisc to pursue maximum gains in an objective function combining net revenue increases with public health impacts and social benefits. The utilization of the longer time horizon associated with an area-based approach permits the consideration of the secondary and tertiary effects of a single development and should facilitate more effective utilization of the public sector funds and regulatory powers harnessed to the tasks of brownfield cleanup and redevelopment, as well as those of neighborhood, or broader urban, regeneration.

The indirect effects of a coherent area-based approach may, however, provide the greatest gains to both private investors and the public as a whole. The key to these gains lies in the ability of an area-wide perspective to overcome the tendencies towards a disjunction between brownfield policy and broader economic development efforts. Infrastructure investments thus may be considered in terms of effects on brownfield redevelopment project viability, not just as indirect subsidies to new economic activity. Non-brownfield redevelopment efforts, such as rehabilitation of public housing and other central city public sector real estate investments can be re-evaluated for their positive spillovers to brownfields and changes in their market value.

Derelict urban sites with environmental problems may be too massive a problem for direct public investment efforts to solve alone. Recognition of this basic fact is, arguably, the rationale for the array of new state Voluntary Cleanup Programs and other brownfield-oriented economic development incentives. Changes in nearby land uses and public investments off-site, oriented toward area regeneration, not specifically to brownfield re-use, obviously can add value to contaminated or environmentally stigmatized sites. A site-specific orientation towards environmental problems will tend to overlook such effects. Movement toward an area-based approach, therefore, will increase

recognition of the spillovers to brownfields of other forms of public sector development efforts. Improved accounting for these benefits will, in turn, increase the willingness of the public sector to make these investments in central cities. Finally, new investment in central cities, found to profit the public sector when the positive external effects on brownfields are included in the calculations, have the potential to improve the quality of life and economic opportunities of central city residents at the same time as they constrain the potential negative environmental and economic spillovers of abandonment and sprawl.

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