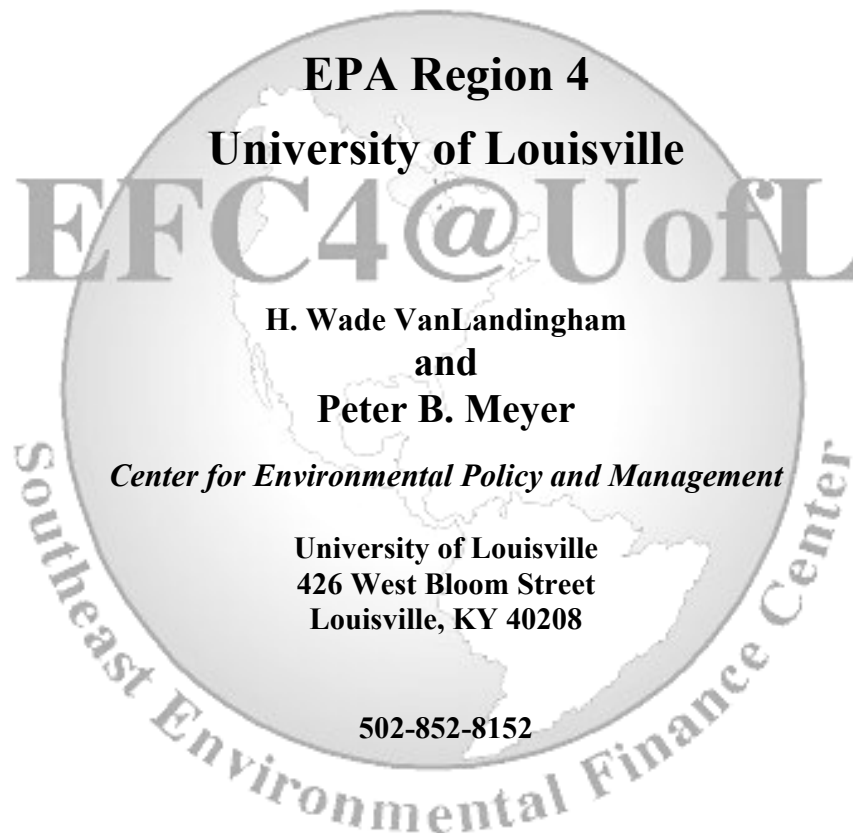


Public Strategies for Cost-Effective Community Brownfield Redevelopment

Practice Guide #1

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Preface and Acknowledgements

This Practice Guide is the first of a series to be produced by the University of Louisville Environmental Finance Center for use by local officials and staffs. The series is intended to provide tools for trainers that can be used to better inform local elected officials and government/nonprofit agency staffs about environmental planning issues and the economic and financial implications of the different policy choices facing state and local governments.

The University of Louisville Environmental Finance Center (UofL EFC) is one of nine centers nationwide supported by the Environmental Finance Program of the U.S. Environmental Protection Agency. Located in the southeastern United States, the UofL EFC coordinates its project planning and work with the Planning and Analysis Branch of the Office of Policy and Management in the EPA Region 4 office in Atlanta and we focus on issues of particular concern to our home region.

This Practice Guide has benefited from support for a prior review of the literature and practice in brownfield reclamation by the authors. The authors acknowledge the support of the U.S. Economic Development Administration, Research and National Technical Assistance Division for the preparation of *Reclamation and Economic Regeneration of Brownfields*, released in August, 2000.

The signing in January, 2002, of the Small Business Liability Relief and Brownfields Revitalization Act has changed the landscape for brownfield redevelopment in a number of ways. Until the guidances for implementation of the Act, due out in late 2002, are issued by EPA, the details of the new prospects for reclamation and re-use cannot be determined. This Guide, then, is prepared with respect to the conditions existing before the passage of the Act. We will introduce and update an additional Appendix as the new legislation and regulations are implemented and enforced. The first version of the Appendix, to be available both in print and as a separate download from our web page, should be out in early 2003.

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INTRODUCTION

In the last decade, a great deal of attention has turned to the redevelopment of brownfield sites, defined in the mid-1990s by the Environmental Protection Agency (EPA) as *abandoned, idled or underutilized industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived contamination* (1). Our goal here is to inform the local Economic Development Organization or municipal agency charged with economic and/or community development in an area (EDO) about the brownfields development process and to demystify the mass of legalistic, technical, and often contradictory or out-of-date writings. This Practice Guide should help to identify workable approaches to potential land contamination issues, point to the best practices of successful brownfield redevelopers, and identify sources of information available for local governments and other organizations interested in launching or expanding their own brownfields efforts.

The Nature of the Brownfields Problem

The reuse of previously developed land is not a new practice. Federally led Urban Renewal efforts in the 1960s attempted redevelopment of the larger urban cores (2). Urban areas and their economic development organizations have had lengthy experience with the intentional reuse of their lands.

Although cities, and to a lesser extent other areas, have been reusing land for many years, the context for this reuse has changed over time. Plant closings associated with the restructuring of the US economy from the 1970s on, retail market and housing location shifts have all helped to generate an array of underutilized and potentially contaminated sites, commonly known as *brownfields*. The sheer number of these sites is impressive. It is generally agreed that there are at least **500,000 sites** with uncertain or risky environmental conditions, in terms of known past uses and current status (3, 4, 5, 6).

Complications in redeveloping brownfields may arise from the conditions of the sites themselves, from their locations, or from actual contamination (or even from the stigma associated with the possibility of contamination). Most of the difficulties of brownfield redevelopment come from the legal and financial issues affecting the projects. Despite these potential problems, there is great interest in reusing these sites because their location may offer exceptional private profits from successful redevelopment, while also contributing to public economic and community development goals.

Conventional wisdom argues that the costs and risks associated with the reuse of these sites often makes them uncompetitive with “greenfield” development. Recent experience, even before the new 2002 law, however, demonstrates that brownfield redevelopment can be financially rewarding for all.

The Need for Information at the Local Level

The process of developing a vacant or agricultural greenfield site is well understood. This is not

true of brownfield redevelopment. The complications come not only from federal and state environmental regulations but also from the details of specialized incentive programs designed to promote brownfields, as well as from the wide range of financing and insurance options available. Good local decisions depend on the quality of data available on both local conditions and the investment options facing redevelopers.

The Legal Liability Environment

When Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) in 1980, it wanted to make reclamation of heavily contaminated but neglected sites easier and more certain. Unfortunately, CERCLA had several unintended negative effects on economic development – in large part because of court interpretations of the Act. The Superfund itself is focused on fewer than 1,410 sites, but the publicity it has generated has undermined the perceived value of 500,000 or more brownfields across the nation that may have minimal, if any, contamination (4, 6, 7).

The problem created by CERCLA comes much more from the legal liability issues it raises for any site with even a small amount of contamination, than from the cleanup or procedural regulations involved (8). The key legal issues involve “strict” and “joint and several” liability.

- “Strict” liability does not require the demonstration of any wrong-doing. Even actions that were legal at the time they were taken and created some contamination result in the actors being held accountable for the costs of clean-up and environmental damages. This liability is also *retroactive*, meaning that it applies even to acts causing pollution years or decades before CERCLA passed in 1980.
- “Joint and several” liability has to do with how this liability is shared among the many parties who could be held responsible for the pollution. CERCLA creates three general classes of “potentially responsible parties” (PRPs): (1) generators of hazardous substances, (2) owners and operators of the site where the contamination is found, and (3) transporters with the authority to decide on the site for disposal of hazardous substances. The joint and several language means that *any one or all of the PRPs may be held responsible for the entire cost of cleanup*, no matter how little pollution they caused. The bottom line has been that local governments or authorities who attempt to redevelop such contaminated properties may end up among the responsible parties.

This potential liability has created a situation in which just about all previously used industrial and commercial sites need to get an environmental assessment before they can be sold and before redevelopment financing can be obtained (9, 10). The regulation has made redevelopment:

- more expensive (because of assessment and cleanup costs);
- riskier (because of the possibility of greater contamination than originally conceived); and,
- slower (due to the time necessary to assess the levels of contamination, clean the property, and obtain appropriate clearances).

Finally, before some 1996 legislative changes, court findings on CERCLA made redevelopment of brownfields more difficult by exposing lenders to liability for the sites they accepted as collateral (3, 9, 11, 12). The net result was to reduce demand for any previously developed sites.

Other Concerns

In addition to environmental concerns, brownfields regeneration has been slowed by weak demand for any type of developed sites (6, 13). A range of factors often combine to undermine redevelopment of abandoned industrial sites in particular, but also other sites in urban centers (14, 15):

- the physical and economic deterioration of older industrial areas in recent decades;
- population out-migration from cities;
- common public sector neglect of infrastructure and service delivery in impoverished areas;
- changes in preferences for production and distribution facility types (such as increased demand for single-story buildings); and,
- greater demand for access to the interstate highway system as trucks have replaced river and rail transportation, leading firms to locate in suburban locations near highway interchanges.

“Greenfield” sites (previously undeveloped properties) are usually in such higher demand areas, cost less per acre to develop, and do not involve as much risk and uncertainty for investors (16).

The Situation Entering 2002

In the 1970s and 1980s, local governments and economic development organizations found themselves with many potentially reusable sites, but little private sector interest in redeveloping those properties and significant obstacles to public sector-led redevelopment (17, 18). The situation changed in the 1990s as states passed laws and regulations including Voluntary Cleanup Programs and more flexible cleanup standards for brownfields based on intended new uses of sites. Other state policy developments included liability relief for project financiers and for innocent new purchasers (and inheritors or acquirers) of previously contaminated sites (19, 20). Federal and state financing became more available, and existing economic development programs have been modified to promote brownfields. Finally, private sector insurers developed new risk-management products tailored for brownfield regeneration (21, 22, 23).

The most fundamental problem for the majority of EDOs that have yet to launch systematic brownfields programs is how to initiate and direct such efforts. Clearly, the first step in a local entity’s brownfields redevelopment project is to gather and assimilate information about the maze of regulations and programs and about the site itself. Here we offer a guide for local EDOs but do not attempt any step-by-step recipe. Appendix A describes some **Guides to Brownfield Redevelopment** that may be useful to interested EDOs, though the new federal law will substantially alter the decision frameworks that applied under those older guides. (You might want to look out for updates from those sources as the new law goes into effect.)

LOCAL DECISION-MAKING FOR BROWNFIELDS REDEVELOPMENT

Brownfield redevelopment needs to be part of the economic development strategy for any EDO working in a previously developed area. In many cases, the local area simply has no other land available for new economic activity or housing. In other cases, the brownfield sites may be located

in the middle of a redevelopment area. Reuse of the sites provides a means of creating jobs, increasing the local tax base, and maintaining an inventory of useable land as an alternative to passively permitting all new economic activity to take place outside currently built-up areas. Redevelopment even can help reduce local government budgets and taxes, since the public sector costs of building and maintaining sewer, water, and transportation infrastructure are lower within areas that were previously developed (24).

Redevelopment also helps to reduce negative neighborhood effects. Abandoned sites can become locations for drug-related or other undesirable activities. Moreover, businesses and residents close to brownfields often suffer lost revenues and declining property values due to the stigma associated with pollution. Any calculation of the costs and benefits of redeveloping brownfields thus needs to include the potential costs avoided by reducing social problems as well as the financial balance sheet. Moreover, even the financial analysis should be based on neighborhood, not single site, economic impacts.

The Costs and Benefits of Brownfields Redevelopment

A growing number of private developers and venture capital firms are investing in brownfields, recognizing that they can be highly profitable (25). More generally, the financial benefits of brownfield investments are becoming more obvious to a broader audience of public and EDO officials. The most comprehensive study undertaken so far of brownfield project economic features examined 107 very diverse types of completed projects completed through 1999 (5). The study found that cleanup costs averaged only 8 percent of total project costs, median public costs per job created were \$14,003, and every public sector dollar invested leveraged an additional \$2.48 in private dollars (with half the public money coming from non-local sources). In short, brownfields provided good EDO investment opportunities.

The economic rationale for public support for the cleanup costs facing owners depends on several factors, including: (1) site conditions, (2) current real estate market valuations of the location and other site factors, and (3) the non-market public interests served by redevelopment. However, a public subsidy only makes sense if the owner's expected cost to clean is more than the value of the site after reclamation.

Three major risks (and, therefore, potential costs) confront private investors in contaminated sites that are not present in other development projects:

- possible cost (and time) overruns in cleanup or containment operations;
- possible liability claims from accidents or contaminant exposures in the past or during the cleanup; and,
- uncertainty about future community acceptance (leading to changes in marketability of the site, restrictions on acceptable land uses, and possible additional cleanup requirements).

In assessing the public economic benefits of a potential project it is important to look beyond the site itself to the wider community (4, 26, 27, 28). Redevelopment of brownfield sites in poor neighborhoods offers many opportunities, including:

- the possibility of new employment for local residents;
- reduced public health risks from past contamination and a lower likelihood of additional

- pollution;
- increases in the tax base associated with new economic activities and employment; and,
- increased attractiveness of the community or neighborhood at large to other new businesses.

Wider recognition of these sorts of “spillovers” is one reason that brownfield redevelopment is increasingly pursued through area-wide strategies. Financing approaches such as tax increment financing (TIF) that borrow against the additional taxes generated by a project are being used where states permit. This tool has the potential to raise more capital if impacts beyond the site are considered due to the larger tax base covered if off-site effects are included (29). But the real reason for taking more of an area-wide approach to considering brownfields redevelopment is that the impacts of abandoning – or reclaiming – such sites can be felt across a metropolitan area or regional real estate market (27, 30, 31, 32, 33).

The very presence of brownfields can undermine the economic competitiveness of a region by damaging its image and making it less attractive. As urban or town centers hollow out, commuting distances grow, expanding new construction takes farmland and open space, major investments in infrastructure are required to serve new areas while existing infrastructure in developed areas is underutilized and may deteriorate over time due to underfinanced and inadequate maintenance (24, 34, 35, 36, 37).

In summary, a region’s inability to address its brownfield problems – conditions increasingly understood by the real estate industry to be solvable – can undermine the credibility of its EDOs. A brownfields strategy thus needs to be part of any economic development organization’s action program. This fact is understood by the federal and state governments that have launched a wide array of programs to support such local EDO efforts.

FEDERAL AND STATE PROGRAMS

Any EDO working on brownfields needs to know what non-local resources are available to support its efforts. In this section, we review the programs in place through 2001. We begin with capsule descriptions of the major federal programs that could support local redevelopment efforts. Then we turn to the key features of the very diverse state programs, to help EDOs examine how their state’s approach can fit into their local strategic decision-making and project selection priorities.

Federal Brownfields Redevelopment Initiatives

Federal recognition that brownfields redevelopment is more than just an environmental issue is reflected in the 1995 launch of the Brownfields Economic Redevelopment Initiative, under which, by 2002, EPA had awarded pilot grants to well over 400 state, local and tribal organizations for projects to stimulate cleanup and redevelopment of brownfields (38). The Federal Interagency Working Group on Brownfields, created in 1997, involves fifteen different federal government agencies.

Environmental Protection Agency

Brownfields Assessment Demonstration Pilots (generally known as Brownfields Pilot Projects). The diverse experience of more than 300 Pilots has produced useful guidance on how to launch a *Public Strategies for Cost-Effective Community Brownfield Redevelopment*

brownfields redevelopment effort or add such a thrust to on-going local economic development efforts. Funds have been used for individual site assessments, area-wide brownfield database development, and special programs to involve community members in brownfield site redevelopment planning.

The Asset Conservation, Lender Liability, and Deposit Insurance Protection Act, passed in 1996, provides protection for lenders and certain other parties from the risks associated with participation in brownfield projects. As lenders have become more confident about the protection available under the Act, more debt capital has become available for brownfields redevelopment. It still appears necessary for EDOs in many local real estate markets to educate bank lending officers and loan committees about the Act.

Brownfields Cleanup Revolving Loan Funds, each capitalized with up to \$500,000, allow state, local and tribal agencies to make loans to developers that facilitate cleanups (39). These funds help fill a financing gap created by the hesitation many commercial lenders feel about providing funds when un-remediated brownfields provide the only collateral. Non-traditional sources of debt capital to pay for cleanup such as these revolving funds thus may remain essential, even for projects with very high risk-adjusted returns.

Job Training and Development Demonstration Pilots provide up to \$200,000 over two years to address the environmental justice and economic inequality issues presented by brownfields (40). These grants may be used for environmental employment and training for residents near environmentally impaired sites to augment the community benefits of brownfield redevelopments.

The Small Business Liability Relief and Brownfields Revitalization Act, signed in January, 2002, greatly expands the funds available for the pilot, revolving loan and other local programs, expands the grant limits we noted above, and provides special funding for new state initiatives to expand brownfield investment and redevelopment opportunities. Its liability relief provisions should also serve to expand the availability of private capital and reduce the costs at which such funds are provided to brownfield redevelopers. The details of the new legal provisions are not yet clear, since the regulatory guidances and procedures have not been formulated – or tested in the courts.

Department of Housing and Urban Development

Community Development Block Grant (CDBG) Program for revitalization of decaying neighborhoods dates to 1974. Both CDBG and Section 108 Loan Guarantee Program funds were used for brownfield projects long before the formation of the Interagency Taskforce on Brownfields. Cleanup of brownfields was specifically defined as an eligible use of CDBG funds in 1998 federal legislation.

Brownfields Economic Development Initiative (BEDI) provides a total of \$25 million annually (for FY 2000) to stimulate local efforts to regenerate brownfields. All BEDI applications must be accompanied by a request for new Section 108 loan guarantee authority and must advance one or more of the CDBG program objectives of benefitting low and moderate income persons, preventing slums or blight, or addressing imminent threats and urgent needs. (This initiative is being expanded and provisions modified as we write in 2002; final implementation procedures and funds availability remain to be determined.)

Department of Commerce, Economic Development Administration (EDA)

The Economic Development Administration provides a variety of assistance to help communities develop and implement local economic development strategies. The agency has supported redevelopment of old industrial sites for at least 25 years. In fiscal year 2002, brownfields redevelopment was an eligible activity under EDA's Public Works and Economic Development Facilities Assistance program that was funded in the amount of \$250 million (41). Substantially greater funding for elements of the programs described below and other, new, brownfield-specific programs, is proposed in the FY 2003 budget.

Planning Program involves the ongoing EDA funding for economic development planning. These funds may be used to integrate brownfields redevelopment into broader economic strategies known as Comprehensive Economic Development Strategies (CEDs). Localities must have a CEDS in place to receive Public Works or Economic Adjustment funding.

Economic Adjustment Program funds are targeted at areas suffering from long-term distress such as economic restructuring or shorter term challenges such as plant closings and natural disasters. These monies may be used for redevelopment, planning, and for locally administered revolving loan funds.

Other Federal Programs and Resources

National Oceanic and Atmospheric Administration (NOAA) Coastal Zone Management Program supports land acquisition and environmental improvement activities for sites adjacent to waterways or coastal areas, and NOAA funds have been used for brownfields in such locations.

Department of Health and Human Services (DHHS) Social Services Block Grants may be used to provide funds for job training related to brownfield cleanup efforts in Empowerment Zones and Enterprise communities. These funds will not pay for cleanups, but they can be important in soliciting support and participation of local communities by delivering services that benefit residents near brownfields.

Department of Transportation provides funds specifically for brownfields redevelopment under both the Federal Highway Administration and the Federal Transit Administration.

U.S. Army Corps of Engineers provides engineering assistance to communities in four broad areas associated with brownfields: site assessment, remediation, property redevelopment, and sustainable reuse.

Other Tools Created by Federal Action That May Be Useful

Community Reinvestment Act credits that can be claimed by banks for lending on brownfield projects in low- and moderate-income neighborhoods. Many banks remain unaware of the 1995 regulatory change by the Office of the Comptroller of the Currency to support brownfields redevelopment (42). EDOs may be able to increase the flow of bank lending to brownfields simply by making sure local banks take the availability of these credits – and the 1996 legislated lender liability relief – into consideration.

Brownfields Tax Incentive – really an accelerated depreciation program – allows investors to “expense” or claim their total brownfield site mitigation (pollution cleanup or containment) costs on their income taxes in the year in which they are incurred, rather than have to depreciate them over time (43).

Civil Rights Act of 1994 and environmental justice issues have worried some redevelopers – but they need not. Community groups could, in principle, use Title VI of the Act to deal with the higher than normal environmental risks of some local populations. However, actual experience with community participation in project decision-making before the treatment of pollution is decided upon suggests that more neighborhood engagement actually can *lower development time costs* over a project’s lifetime (44, 45). Furthermore, broad-based community input may *improve* both regulatory and planning processes (46).

State Brownfields Regeneration Programs

As of 1994, EPA could identify only 14 states that claimed to have developed their own programs to facilitate brownfields cleanup and reuse (47, 48). According to the generally accepted tabulations of the Northeast-Midwest Institute (49), by late 2001, all but two states (North and South Dakota) had some form of so-called Voluntary Cleanup Program (VCP) to promote brownfields reclamation and redevelopment.

The programs in place, while discussed as if similar, vary tremendously. Through 2001, Kentucky, for example, only provided liability relief to public sector redevelopers. Other states, such as Illinois, Massachusetts, Michigan, Minnesota, and Pennsylvania, offer special financial assistance as well as cleanup certifications to private developers. Some programs focus very narrowly on stimulating manufacturing – or housing – or only assist sites in special sub-state target areas. However, all these state programs are efforts to reshape the local effects of the heavy burden of federal brownfield liability for cleanups and damage (50, 51, 52).

This expansion of state brownfield programs is a logical outgrowth of broader state innovation and competition in efforts to encourage new investment and associated economic development (53). In fact, the states with the most active VCPs also tend to have special economic stimulus packages targeting brownfields, or to regions or locations that are likely to contain them (54, 50). Michigan, for example, provides special incentives to its “Renaissance Zones;” Pennsylvania has a “Special Industrial Areas” cleanup standard and other states have targeted their federally designated Empowerment Zones or Enterprise Communities or their own state enterprise zones for brownfields incentives.

By and large, the state VCPs do not provide protection against lawsuits filed against developers by private parties, but only against state (and/or local) enforcement actions (19, 49). Patterns and types of financial support also vary, from small loans for site assessments to major grants and 100% tax credits for cleanup costs (54, 55). Overall, the VCPs have greatly improved the brownfield project investment climate.

Each of the different elements of state VCPs plays a slightly different role in facilitating

brownfields reuse (19, 54, 20, 56). Since the VCP programs continue to evolve, local EDOs need to revisit their state contacts regularly to be sure they are aware of the resources currently available to them (49, 50). Features that can affect the value of your state's VCP to your economic regeneration efforts include:

Eligibility.

Some states (CT, KY, MA) limit the protection under their VCPs to “innocent parties,” excluding any federally defined “Potentially Responsible Parties” (PRPs) who may have been polluters. Other states (AR, FL, MO, PA) include anyone willing to clean up a site, and some (CO, for example) appear to target their programs to current owners who are PRPs (49). The non-PRP programs may help new owners or developers, but would not assist current owners in cleaning or preparing a site for redevelopment. As a result, they do not encourage owners with liability concerns to bring large tracts of idle land to the market. (Owners may “warehouse” sites in order to avoid possible mandatory cleanup orders or damage claims.) New insurance coverage eventually may give a private solution to the liability problems that lead owners to warehouse land. Meanwhile, VCPs can help bring the underutilized sites to market if they offer PRPs liability relief (20, 50).

Participation Requirements.

In some states (MA, for example), any known contamination must be publically disclosed, and the pollution forces a site into the program. In others (such as PA), privately conducted site assessments do not have to be made public even if they uncover significant pollution, so there is no pressure to enroll in the VCP. If the results of a site assessment can be kept private, then an owner might do one just to see what his problems might be – and he may find little or no contamination. Therefore, states that offer privacy may stimulate site assessments and redevelopment at the expense of some public right to know. On the other hand, such secrecy may permit severe risks to remain hidden on some sites and may increase community distrust of redevelopment efforts.

Site Assessment Support.

The state VCPs provide varying levels of technical assistance from state agencies, information from agency records regarding prior site uses or spills, or financial assistance in the conduct of brownfield site assessments. Where such support is available, it may make it much easier for smaller EDOs to launch local brownfield programs.

Mitigation or Remediation Support.

Some VCPs permit applicants to file both a mitigation plan and a request for state financial aid for the cleanup at the same time. State funding decisions, however, may be based on expected economic impacts such as new jobs, rather than the costs of dealing with contamination. In such cases, even major pollution problems may have difficulty getting state cleanup funding.

Liability Relief from Public Actions.

Three types of state certifications are generally available under VCPs. “Certificates of Completion” (such as KY offers) simply indicate that the planned and state-approved site cleanup or containment has been executed to the state’s satisfaction. State “Covenants Not To Sue” (on which the MA and MI programs are based) promise no future state enforcement actions, but may offer no protection against private, sub-state public, or federal liability claims. “No Further Action Letters” (evident in the PA program) represent a formal finding that a cleanup has met the state standards, with no need for additional action, and may provide more liability relief in general. All these certifications include some “reopeners,” permitting some re-examination and possible additional cleanup as new information becomes available or on-site land uses change over time.

Liability Relief from ‘Third-Party’ Actions.

Some states (PA, for example) go beyond certifying public acceptance of the remedial actions on a site: they provide state court immunity from damage claims made by private parties once the state has approved a remediation. These provisions can protect developers. They also may encourage communities to conduct more active public oversight.

Oversight/Approval Procedures.

Most state VCPs involve at least three definable steps: (1) notice of intent to act, (2) provision of evidence on completed action, and (3) state review of the work done. Most states use environmental agency personnel to review cleanup plans and their execution. Others (notably MA and OH) rely on state-certified private environmental professionals to do the reviews. Allowing developers to consult with regulators on plans in process may help them prepare better plans and avoid costly rejections and resubmissions. Such cooperation can also make the regulatory process more predictable for developers and encourage them to take on brownfields.

State Regulatory Action Time Limits.

Recognizing that time is money, many states have limited how much time agencies have to review and act on proposals or reports of completed cleanups. Speedier regulatory action lowers elapsed time costs and regulatory cost uncertainty for developers.

Variable Cleanup Standards.

One major innovation present in most state VCPs is flexibility in cleanup standards, with requirements most often based on intended future sites uses. This flexibility permits redevelopment without a complete cleanup. The ability to leave some contaminants on site really can lower project costs, allowing multi-family residential, commercial or industrial redevelopment on sites that are too expensive to clean for single family residential uses. The flexibility, however, can make redevelopment decisions more complicated since it creates varying remediation costs for different planned land uses. EDOs can help developers deal with these increased decision-making costs.

Engineering Controls.

To qualify for less burdensome cleanup standards, developers are often required to install ground “caps,” fences, or other barriers to limit exposure to contaminants left in place. States vary in the extent to which such controls are recorded or registered and in the procedures they have developed for oversight and to assure that the controls are maintained over time. Communities may fear that the engineered controls could fail and worry about such redevelopments. EDOs can help by serving as local registries for – or even doing periodic inspections of – such barriers.

Institutional Controls.

Three different types of institutional controls – limiting what can be done on any one site – may be used to make sure that the future uses are consistent with the flexible cleanup standards permitted and to assure that engineering controls are maintained over time (57, 58, 59). While any of these three controls would provide a record of site conditions and engineered barriers, the extent to which the information accompanies all deeds in future real estate transactions varies:

- Deed Notices, the most common control, rarely need to be reported as a matter of law, although a record is inserted in county property files in the expectation that real estate lawyers will find them;
- Deed Restrictions provide a more formal record and are more likely to be required to be reported to prospective purchasers in property transactions;
- Environmental Easements would provide the most complete and permanent record of the need to limit land uses.

Many states permit engineering controls and/or varying cleanup standards for the immediate new land use proposed for a site, but do not have formal institutional controls in place. Some appraisers and development specialists claim that these land use controls reduce sale prices or future property values. However, there is little or no evidence to support their claims (60, 61, 62). Indeed, some sellers impose their own use limits on buyers so as to protect themselves from future liability claims for any contamination that they leave on site before they sell (63).

Right-to-Know/Public Participation Requirements.

The public’s right-to-know and to participate in decisions about brownfields redevelopment are treated very differently across the states. Cleanup cost savings associated with partial cleanups may be offset by the expenses associated with increased public participation many states then require. On the other hand, more community involvement can reduce the risks developers may face due to the actions of unhappy neighbors.

Reopener/Reconsideration Clauses.

CERCLA reserves the federal right to “reopen” any approved cleanups if new dangers arise, risks are discovered, or under other conditions. EPA has argued that most brownfields have levels of contamination below those with which the agency is concerned. Most states require a failure of engineering or institutional controls before a case is reopened. Narrow conditions for reopening appear to offer greater certainty to redevelopers, but there is no evidence that even broad provisions

impose a risk that deters regeneration efforts.

COST-EFFECTIVE LOCAL BROWNFIELDS REDEVELOPMENT:

A REVIEW

The traditional role of the EDO involves acquiring sites, overseeing their development, financing, and marketing them. The process doesn't change for brownfields – but it gets more complicated.

Site Assessment

The first activity in a brownfields redevelopment project is an on-site environmental assessment. The purpose of this assessment is to determine:

- what contamination is present,
- whether this pollution poses a risk,
- what procedures will be needed to make the site acceptable for redevelopment, and,
- the costs and time necessary to do the needed site environmental preparation.

On most brownfields, this process will find either no contamination at all, or just a minimal, and fairly easily dealt with, level of pollution. Nonetheless, in some instances, the environmental assessment may be expensive. That is why many of the state programs are prepared to cover some assessment costs.

It is important that the site assessment be as thorough as possible since this knowledge will minimize the risks and uncertainties inherent in a brownfields project. The American Society for Testing and Materials (ASTM) developed such guidelines starting in the mid-1990s. Its standards are now readily accepted (64, 65, 66). Unfortunately, many brownfield program decision-makers are not aware of this development. They thus tend to exaggerate the project uncertainty that remains after completion of a site assessment that meets the ASTM standards. Fear of that uncertainty, and lack of current information about lower cost cleanup or containment techniques, has blinded many potential developers to brownfield investment opportunities.

Remediation and Development

The assessment will specify the type and level of cleanup, containment or other remedial action needed (or offer a range of possibilities depending on final use). Some remediation work may require investment by the EDO if no PRP's are involved in the project. When such costs are high they may have to be borne by the local agency in order to keep land costs within market norms.

At the remediation stage, brownfield projects have an above-average risk of cost-overruns. The obvious problem is that the assessment may not have uncovered all the problems that a bulldozer will. This is the primary factor that separates a brownfields project from a traditional greenfield development.

The *risks* associated with brownfield redevelopments are generally understood. The major problem encountered involves *uncertainty* over the likelihood that additional costs will arise and the

amount of money they may involve (67, 55, 68, 69, 70). If it is not possible to put firm dollar values on risks, it becomes very difficult to determine the needed risk-adjusted rate of return for a project. Not having firm numbers, investors may simply abandon projects – or only pursue those with truly exceptional returns. Thus, it is the uncertainty associated with brownfields that poses the biggest barrier to redevelopment.

Private Financing

Most brownfields projects initiated by EDO's are funded by a combination of public and private monies. Often state grants pay for some portion of the assessment and remediation costs associated with the environmental cleanup. However, most projects still require developer equity, bank loans, or some other source of private capital. EDOs that can draw on non-local brownfield project support resources will be better able to attract the needed private investment.

Financiers can make loans on risky property, or even take equity positions in development efforts, provided they are able to make allowances for their risk exposure through higher interest rates, reserve accounts, inclusion of more secure collateral or similar approaches (33). Due in part to the combined effects of the 1996 Act providing partial relief for lenders from joint and several liability under CERCLA, the 1995 Community Reinvestment Act provision of credits for brownfield investments, and the accumulation of experience with successful projects, banks are now more willing than ever to lend on brownfields. Exceptional costs remain: Banks require brownfield borrowers to demonstrate higher levels of “due diligence” and loans are typically made at higher interest rates, reflecting concern about exceptional risks, including the prospect of borrower default prior to a cleanup (71, 72). As a result access to capital remains a problem for brownfield projects (73).

The continued tight brownfields capital market appears to be due to a number of different factors:

- Brownfields are often in neighborhoods with many problems other than contamination, including poor infrastructure or transportation access, crime, and related ills (74, 31, 75, 76);
- For a variety of reasons, urban land is often less in demand than suburban or exurban sites, even in the absence of the complicating factor of possible past contamination (77, 74, 78);
- Federally financed highways and other infrastructure development, along with tax policies and other public policies, have tended to subsidize development of previously rural and suburban land (greenfields) for decades, placing all urban land, at a further competitive disadvantage (79, 36);
- Most brownfield sites, even those only suspected of having contamination, are given valuations by appraisers that may exaggerate risks or costs, and thus face reduced access to debt capital from institutions with prescribed “loan-to-value” lending limits (62); and,
- Due in large part to enduring, but inaccurate, myths about brownfield risks, concerns about project viability and stability of cash flow for loan servicing continue to limit the willingness of lenders to fund, regardless of property valuations.

Insurance

Insurance is a vehicle for transferring risk and uncertainty. If premiums are not excessive, and if

the coverage is appropriately designed for the specific brownfield project, insurance can address exceptional project uncertainties arising from environmental conditions – and even the exaggerated fears remaining from problems that have not arisen since the late 1980s (80, 81). There are two main problems with insurance in the current market: First, these policies are “manuscripted,” written with special language designed for each specific site or project. The complexity of policies forces EDOs to use environmental insurance experts to help buy needed coverages. Second, the overwhelming majority of individual brownfield sites are too small for insurance to be cost-effective for any single project.

At present, the cost-effectiveness of any of the coverages available is related to project size more than to the type of contamination problem involved. Given the high fixed costs of underwriting and manuscripting, the individual project “cost cap” environmental insurance for remediation expense overruns available today is considered to be efficient only for sites with a minimum cleanup costs of \$2,000,000 (92). Some states and insurers are beginning to address this problem through group coverages. Lenders that buy their own coverages may acquire insurance for a portfolio of loan holdings. For large EDOs or groups of smaller ones willing to negotiate group policies with insurers that cover a number of different sites, environmental insurance could prove to be an exceptional opportunity to enhance the market valuation of brownfields and attract new investment (63).

The emergence over the past five years of insurance coverage for the exceptional risks associated with brownfields has the potential to significantly change the prospects for redevelopment efforts (80, 21, 22, 63). Three major types of coverage are being under-written, each with its own set of options and conditions, and each playing a different role in supporting brownfields redevelopment by capping and quantifying risk for investors and their financiers (23):

- **Cleanup Cost Cap** coverages do what their name suggests: limit the costs of site preparation. Cost overruns arise from unexpected costs either to address known conditions or to deal with contaminants not discovered or identified when the cleanup was designed and approved. The policies are intended to cover only the actual period of remediation. Some cleanups, such as those that rely on phytoremediation (using plants to gradually neutralize toxics in the soil) or those that involve extended pump and filtering operations (for contaminated groundwater), may require longer term policies.
- **Pollution Liability** policies protect against lawsuits involving any of the special brownfield risks, from health effects to reduced neighborhood property values. This form of coverage is desirable for an extended period, but may be difficult to get for more than ten years in the current market (92). Policies may be written so that successive owners inherit the protection, a provision that may help to maintain the value of the property over time despite its possible history of past contamination.
- **Secured Creditor** policies protect lenders against loss of principal for brownfield loans in the event of defaults, eliminating any need for foreclosures. These policies do not protect developers but may help them get bank financing. Banks and other lenders can buy policies themselves, passing the cost on to borrowers, or may demand that borrowers obtain coverage before they approve a loan.

Exit Strategies

Marketing brownfield sites and exiting from the brownfield development may be complicated by the stigma attached to sites that have been remediated. It is important to consider the eventual

disposition of sites as part of the initial development strategy. In the past, some EDOs have found themselves with a growing inventory of remediated sites for which they have no immediate tenants. This situation often is further complicated by low private market demand for any sites located in previously developed areas of the city. Areawide strategies that consider brownfields in their neighborhood context are, in many cases, useful tools. Other strategies sometimes involve obtaining a commitment from local government offices and agencies to become the initial tenants of such sites, at least until the private market demand emerges.

Appendix A:

GUIDES TO BROWNFIELD REDEVELOPMENT PROCESSES

Table A-1 describes many different “how to” guides to brownfields redevelopment. There is rapid and ongoing change in the regulatory, legal, and financial climate for these projects. Consequently, we have tried to indicate where the source material may be dated. Furthermore, we recognize that both the goals of brownfields regeneration and the challenges and opportunities of such developments vary tremendously among localities. Accordingly, it would be inappropriate to identify the “best” guide – or even to rank the materials with regard to their apparent value.

Instead, we have provided a profile of the key features of some of the guides available to assist EDOs. Many state economic development and environmental agencies write or sponsor manuals that are specific to their programs, and other groups have generated guides with one or another special interest or redevelopment concern in mind.

The volumes described here, even where we indicate a special focus or concern, provide types of information and illustrative guidance that could be of value to many different EDOs across the country. We have used organizational authorships in the table, rather than actual authors, to provide an indication of the perspective guiding the preparation of each guide. This list should not be considered comprehensive. Even the most recent guides will be obsolete as soon as the latest federal brownfields legislation goes into effect later this year.

Table A-1 Guides to Brownfield Redevelopment Processes		
Organizational Author - <i>Title</i> (Citation Number)	Date	Comments
American Bar Association - <i>Brownfields: A Comprehensive Guide to Redeveloping Contaminated Property (82)</i>	1997	Somewhat academic. Good, but already dated, description of state programs.
Center for Neighborhood Technology - <i>Recycling Contaminated Land: A Community Resource Guide (83)</i>	1996	Strongly focused on Chicago, but useful for its orientation and focus on community involvement in brownfield project planning.
Consumers Renaissance Development Corporation - <i>Brownfield Redevelopment Guide (84)</i>	1998	Michigan specific. Strong community development orientation. Good on process.
Council of Great Lakes Governors - <i>A Blueprint for Brownfield Redevelopment (56)</i>	1998	Applies to Great Lakes States and Provinces only. A lot of political fluff but good descriptions of state programs.
Council for Urban Economic Development - <i>Brownfields Redevelopment Manual (8)</i>	1998	Limited discussion of actual development projects, but strong on financial and other tools.
Environmental Law Institute - <i>A Guidebook for Brownfield Property Owners (85)</i>	1999	Private sector orientation, but good discussion on how to involve community groups.
Georgia Tech Research Corporation - <i>Community Brownfield Guidebook (86)</i>	1996	Strong science. Limited case examples.

Information Provided

- A:** Legislation (liabilities, risks, financing concerns)
- B:** Physical contamination and remediation processes
- C:** State and federal programs
- D:** Private sources of financing and insurance services
- E:** Community involvement, environmental justice, and/or employment issues
- F:** Illustrative cases

Key to Column Codes:

- ✓ Useful for current project planning and development program design
- O:** Outdated by the passage of time; too much has changed in the policy context
- L:** Limited scope of coverage; some information, but it may not be of great value

Table A-1, continued
Guides to Brownfield Redevelopment Processes

Organizational Author - Title (Citation Number)	Date	Comments
Int'l City/County Management Assoc. & Northeast-Midwest Institute - <i>Brownfields Redevelopment: A Guidebook for Local Governments and Communities (26)</i>	1997	The most comprehensive guide. Encyclopedic but becoming dated as state programs change. Strong community orientation.
Int'l. City/County Management Association <i>Putting the Pieces Together: Local Government Coordination of Brownfield Redevelopment (87)</i>	ND	Post-1996 survey of nearly 40 Pilots provides excellent guidance on inter-organizational and inter-agency coordination at the local level.
LEXIS/Matthew Bender Co. <i>Brownfields Law and Practice: The Cleanup and Redevelopment of Contaminated Land (88)</i>	1998	Looseleaf, regularly updated and expanded since first release, with chapters on each state and on different liability and financing concerns. Designed for attorneys providing advice, not independent EDO deal-making personnel.
Northeast-Midwest Institute - <i>Coming Clean for Economic Development (89)</i>	1996	Becoming dated, especially with regard to federal and state government programs.
Northeast-Midwest Institute - <i>NewLife for Old Buildings (90)</i>	1991	Seminal work, with details now outdated; useful for understanding scope of problem.
Urban Land Institute - <i>Turning Brownfields into Greenbacks (16)</i>	1998	Overly restrictive definitions of brownfields; lacks community development perspective. Strong on financials and good applied cases.

Information Provided

- A:** Legislation (liabilities, risks, financing concerns)
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Appendix B:

FEDERAL PROGRAMS AND POLICIES SUPPORTING BROWNFIELDS REDEVELOPMENT

The sources of federal funds that might be used to clean or contain pollution or redevelop brownfields extends well beyond the regularly identified efforts of the fifteen agencies participating in the Federal Interagency Working Group on Brownfields. The range of federal funds available as of 1999 is well documented in the Northeast-Midwest Institute's *Guide to Federal Brownfield Programs* that is available at: <http://www.nemw.org/BF_fedguide.htm>.

One outstanding source that documents the different possible ways of funding environmental improvements, including brownfields reclamation, is available from the Environmental Finance Branch of EPA, *A Guidebook of Financial Tools: Paying for Sustainable Environmental Systems*.

- The April 1999 update of this excellent compendium is available at: <<http://www.epa.gov/efinpage/guidbk98/index.htm>>.
- A CD-ROM version of the *Guidebook* is available from regional Environmental Finance Centers, a list of which is available at: <<http://www.epa.gov/efinpage/>>.

An alternative source that provides useful information on all federal programs and reviews the economic development value of the funds and the private sector impacts of new activity is the *Catalogue of Domestic Assistance Program*. The Catalogue lists all the major federal funding sources by types, average award, likelihood of receipt for funds, and eligible applicants, among other useful tools. It contains instructions on how to use it to find sources of funds and technical assistance for a variety of different development projects. It can be found at: <<http://www.cfda.gov/>>.

Table B-1 offers an initial source for key detailed information: the web sites of the federal agency programs discussed in this review. These web pages are updated regularly and cover eligibility and application issues, often including the latest required application forms in downloadable form. The home pages of the agencies themselves can be reached from these program-specific sites.

**Table B-1
Federal Programs and Policies Supporting Brownfields Redevelopment**

Agency and program title	Program coverage/activity	Web Sources for More Information
EPA Brownfields Assessment Pilot Demonstrations	\$200,000 to start a brownfields reclamation program and pay for site assessments	http://www.epa.gov/swerosps/bf/pilot.htm#pilot
EPA Brownfields Cleanup Revolving Loan Funds	Up to \$500,000 to capitalize a revolving loan fund to pay for brownfield cleanups	http://www.epa.gov/swerosps/bf/rlflst.htm
EPA Job Training and Development Demonstration Pilots	\$200,000 for environmental employment and training for residents near brownfields	http://www.epa.gov/swerosps/bf/pilot.htm#job http://www.epa.gov/swerosps/bf/job.htm
EPA RCRA/Brownfields Prevention Pilots	Contractor support to expedite cleanups to avoid further environmental problems	http://www.epa.gov/swerosps/bf/html-doc/bfrcra4p.htm
EPA Clean Water State Revolving Loan Fund	Funds can be used to address all forms of water contamination from brownfields	http://www.epa.gov/swerosps/bf/html-doc/cwsrf.htm
EDA Planning Program Grants	Funds for up to 50% of planning costs for brownfield projects, especially for new jobs	http://www.doc.gov/eda/html/planning.htm http://www.doc.gov/eda/html/planothr.htm
EDA Local Technical Assistance Program	Grants to distressed areas to get assistance in addressing special development issues	http://www.doc.gov/eda/html/locltech.htm
EDA Public Works and Development Facilities Program	Funds for specific development needs, with brownfields enumerated as eligible activity	http://www.doc.gov/eda/html/pwprog.htm
EDA Economic Adjustment Program	Funds for particularly distressed areas to plan or implement redevelopment programs	http://www.doc.gov/eda/html/econadj.htm

Table B-1, continued
Federal Programs and Policies Supporting Brownfields Redevelopment

Agency and program title	Program coverage/activity	Web Sources for More Information
HUD Community Development Block Grants	Entitlement grants for neighborhoods; HUD has promoted their use for brownfields	http://www.hud.gov:80/progdesc/cdbgent.html
HUD Section 108 Loan Guarantees	Guaranteed loans to attract capital to large development projects; including brownfields	http://www.hud.gov:80/progdesc/cdbg-108.html
HUD Brownfields Economic Development Initiative	Funds to complement those from Sec 108 loans intended to redevelop brownfields	http://www.hud.gov/bedifact.html
Army Corps of Engineers	Expertise and engineering services available to help cleanups, especially along waterways	http://hq.environmental.usace.army.mil/programs/brownfields/brownfields.html
Department of Health and Human Services	Money from the Agency for Toxic Substances and Disease Registry and the National Institute of Environmental Health Services can serve off-site environmental health needs of brownfield communities	http://www.ATSDR.cdc.gov/COM/commhome.htm http://www.NIEHS.nih.gov/
DOT Federal Transit Administration's Livable Communities Initiative	Planning and technical assistance support for local site reclamation, transit planning and smart growth efforts	http://www.bts.gov/ntl/DOCS/livbro.html
DOT Federal Highway Administration.	Improving road access to brownfields is a factor in highway planning fund allotments	http://www.fhwa.dot.gov/environment/bnflmem.htm

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