

Planning for - and Managing - Environmental Risks: Fighting “Sprawl” by Stimulating Brownfield Redevelopment

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Risk and uncertainty about project timing, costs and returns, more than the actual costs of cleanup or containment of contamination, repeatedly have been found to be the key factors restraining the redevelopment of urban brownfields (Chilton 1998; Coffin and Shepherd 1998; Walker, *et al.* 1998; Yount and Meyer 1994). Over the past five years, states have increasingly promulgated new programs and policies to reduce prospective liabilities and thus uncertainty for redevelopers of brownfields; federal legislative change has been slower in coming, but it, too, has moved in the direction of providing more certainty (Bartsch and Dorfman 2001; Meyer 2000). At the same time, the private sector has begun to provide more risk transfer and control services, in the form of environmental insurance (EI) for brownfield projects (Yount 1999).

The EI market has been expanding rapidly, but its application to brownfield problems mainly has been through the actions of large-scale private landowners and developers (Dybdahl 2001; Meyer and Lyons 2000; Meyer and Yount 1999). In this paper, we examine the needs for, problems with, and approaches to public-sector led environmental risk management for the small “scatter site” brownfields that permeate older built-up areas. Such sites present different development problems for brownfield investors (Yount and Meyer 1999). We draw on findings from a four-month web-based dialogue on uses of EI for brownfields and potential public sector roles that we conducted as part of ongoing research for the US EPA on environmental insurance and private sector risk transfers as means of attracting new investment to brownfield sites.

¹ This paper reports on work conducted by Northern Kentucky University and the University of Louisville under a cooperative agreement with the US Environmental Protection. Findings, however, may not necessarily reflect the Agency’s view, and no official endorsement should be inferred.

We begin with an overview of the context within which risk management decisions are made and the actual risk problems faced by local governments in this context. Next, we describe the innovative data collection process undertaken in this study. The tool offers a new approach to accumulation of information and exchange between informants that has previously required in-person focus groups. We then offer a sampling of the empirical findings from the electronic interaction, and from other interviews collected, and conclude with summary discussion of the implications of those results for the appropriate public sector roles in promoting the regeneration of small scale scattered brownfields in urbanized areas.

I

This section provides three types of needed background information for an understanding of the risk management issues addressed in the remainder of the paper: (1) a summary of the three major types of brownfield-related insurance products available in the market, (2) a brief statement of the problems facing public sector efforts to use insurance as a tool for stimulating brownfield reclamation, and (3) a statement of the implicit policy premise underlying public sector promotion of the use of EI.

Insurance Coverages Available for Brownfields

There are three major classes of environmental insurance that are directly applicable to the problems of risk management and transfer and the broader issue of reducing uncertainty in efforts to bring contaminated sites back into more active use. In addition, other environmental insurance products, available to consultants, engineers, and contractors, can play a role in brownfield redevelopment. The three major coverages, addressed in some detail here, are:

1. Pollution Liability Policies
2. Cleanup Cost Cap Policies
3. Secured Creditor Policies

Since there is no ‘standard’ package, akin to home-owners or car insurance, each policy is ‘manuscripted’ (written with specially designed coverage) to meet the particular need of each individual project, so the buyer must have the capacity to identify the specific mix of coverages needed and to negotiate with the underwriters.

1. Pollution Liability Policies incorporate three distinct elements:
 - Protection against the costs of third party bodily injury and property damage claims, regardless of compliance with governmental mitigation requirements;
 - Protection for the insured against the costs of further remediation and related expenses, if required after initial compliance with governmental mitigation requirements, due to exercise of regulators’ ‘re-opener’ clauses; and,
 - Protection against legal defense costs associated with the first two elements.
2. Cleanup Cost Cap Policies limit the uncertainties associated with the risk that

additional contaminants may be found and/or effort required as part of a cleanup. The insurer pays the excess costs above a deductible amount (usually a percentage of the estimated cleanup cost). Engineers' prior estimates of cleanup effort and cost required are key to the cost and coverage of such policies, so developers need to invest before buying the coverage.

3. Secured Creditor Policies are written to benefit lenders, thereby easing developer access to debt capital. They reimburse lenders for the losses and/or costs in cases of borrower defaults associated with a pollution condition.

The Rationale for Public Sector Facilitation of Developers' Access to Insurance

The risk on brownfield projects, large or small, is greater than on other real estate investments. As a result, they suffer a competitive disadvantage relative to alternative investments, other things being equal, simply because of the uncertainty developers recognize to be present. Developers thus demand a risk premium on their project rates of return (Walker, *et al.* 1998). If the public sector wants to promote brownfield redevelopment, it then must compensate in some fashion for the differential costs and risks of projects on contaminated lands. This compensation can take the form of financial incentives and subsidies to developers (tax abatements, reduced cost of capital, grants, etc.), or, alternatively, it may take the form of protection from project uncertainties that reduces demands for risk premiums in returns on investments.

The vast majority of all brownfield sites, numbered in the hundreds of thousands, are small parcels, typically under half an acre in size. The cleanup costs on these sites are usually so low that individual insurance coverage for them is not cost-effective (Meyer and Chilton 1998; Yount 1999; Yount and Meyer 1999). Moreover, the development firms attracted to such small sites are not likely to be of such a size that they have the capacity to efficiently negotiate for the types of insurance coverage that would best serve their risk management needs. Thus, on both premium cost and coverage negotiation efficiency grounds, the public sector may be able to increase investor and developer interest in reclamation of the small sites that comprise the majority of the brownfields problem if insurance coverage can be arranged for groups of small sites. Such group policies have the potential to reduce premiums while providing standard baseline coverages that eliminate the need for negotiations and manuscripting.²

Problems in Public Sector Brownfields Insurance Program Development

In the past two years, there has been substantial interest in environmental insurance for brownfield redevelopment expressed by state and local officials. Progress, however, has been slow in terms of creating insurance programs that are really useful to governments. Public officials are confronted with challenges that extend beyond those found in the private sector

² This sort of coverage is precisely what the Commonwealth of Massachusetts arranged in 1999 for small scale brownfield projects in that state. Other states continue to examine the appropriateness of the Massachusetts model for their purposes, but cities and counties are also looking to find new ways to promote brownfield regeneration and infill in their areas.

(e.g., they seek to redevelop both publically and privately owned sites). Moreover, they operate in organizational settings that do not easily adapt to utilization of new private sector services as tools for advancing agency objectives.

Findings from two prior reports generated under our cooperative agreement with EPA , based on interviews with insurers and with representatives from state and municipal brownfields redevelopment organizations, provided the research findings that served as the rationale for the research reported here (Yount 1999; Meyer and Yount 1999). In brief, those reports concluded that:

- The many public redevelopment programs trying to regenerate abandoned and underutilized sites require help in acquiring the most useful and cost-effective insurance products;
- What is needed is development of workable models of government-led insurance programs that might serve as alternatives or supplements to existing financial incentives as means of promoting brownfields reclamation; and,
- The potentials of portfolio policies, bulk purchases of EI, and/or government self-insurance programs warrant more systematic examination.

While insurance products are commonly used in large-scale, private brownfield projects, public entities experience great difficulty in obtaining the coverages for the following reasons:

- The level of public sector knowledge is low with respect to insurance in general and the value of environmental insurance to brownfields projects in particular.
- Brownfield policies are complex, and the need for manuscripting coverages means that public cannot simply replicate private sector programs because governments are contending with both publically and privately owned sites, must provide for both small- and large-scale projects, may have limited liabilities, and are subject to special legal requirements dictating insurance purchases.
- Relatively few brokers have brownfields expertise and most of these are fully occupied with private sector developers, so there is relatively little profit motive for the needed specialists to market the appropriate insurance coverages to the public sector.

Special effort thus is needed to initiate serious consideration of the design of state- and local-level brownfield insurance programs to spur reclamation and redevelopment.

II

We responded to this need by designing and operating an electronic focus group (EFG) to facilitate discussion about the public sector's need for insurance coverages, the insurers' willingness to provide coverage, the institutional barriers to development of such coverage programs, and ways of addressing those impediments to new insurance provision. With EPA funding, we constructed a web site that permitted open discussion between parties. Participants

remained anonymous, identified only by their role in the insurance provision/consumption process. Each individual was assigned a user name that described his or her role in the brownfields redevelopment or insurance provision process; the actual names and organizational affiliations of participants were not used.

Anonymity was considered essential for a number of different reasons, including the potential legal liability of participants and their willingness to voice concerns or issues:

1. To address the concerns of insurance underwriters who do not want to appear to promise types of coverage that they may not be able to provide for all projects;
2. To foster creativity by encouraging individuals to raise ideas and questions that they might hesitate to express otherwise;
3. To permit state and local officials to:
 - admit their lack of knowledge about insurance without hesitation, because they could not be identified,
 - describe their insurance needs without the risk that they would be besieged by brokers try to make a sale, and,
 - describe brownfield sites and neighborhoods without the risk that some property owners might be concerned about loss of real estate values (some site assessment programs have been limited by property owners' threats of 'takings' lawsuits).

At the end of the project, a list of the names and affiliations of participating individuals will be provided to participants, but their code names will not be unmasked.

The participants in the EFG included the following types and numbers of individuals:

1. 43 representatives from a variety of local government brownfields efforts involved in:
 - cleaning and/or selling publicly owned brownfield properties to private parties;
 - facilitating privately owned redevelopments; and,
 - assisting in the redevelopment of both publicly and privately owned sites.
2. 37 representatives from state economic development and/or environmental agencies
3. 16 public sector offices involved with insurance coverage or risk management for state or local governmental units, including representatives of existing multi-jurisdictional insurance pools and other parties engaged in administering self-insured pools
4. 12 environmental attorneys with a variety of different client orientations
5. 54 individuals associated with the insurance industry, including ...
 - 20 representatives of: insurance carriers and underwriters of EI coverage
 - 24 brokers who conduct business with several carriers in providing coverages
 - 10 independent risk management consultants who do not broker insurance
6. 21 Brownfield analysts, including legislative and policy specialists and EPA consultants

A number of different bulletin boards were structured by the researchers to stimulate specific discussions (problems with small sites; purchasing procedures and bidding processes; the potential of existing public self- insurance pools as providers, and so on). Messages posted to the

different discussion bulletin boards on the web site were read daily by the analysts and activated to the web site only after being checked to eliminate breaches in confidentiality. As the discussions progressed over a four-month period, interactions were archived on a searchable Oracle database. Regular e-mails were sent to all participants, summarizing recent activity and issues raised.

Toward the end of the active interaction period of operation of the web site, the analysts augmented discussions with summaries of telephone interviews conducted with key participants. Our objective was to expand the outline descriptions of innovative approaches offered in the bulletin board postings with more detailed information and examination of key issues. The interviewees proved very willing to elaborate on their written contributions: our requests that they do so appear to have been taken as compliments on the value of their basic participation: all people asked to give telephone interviews agreed to our taping their remarks. This supplementation helped to put flesh on the bones of their descriptions of possible approaches, providing information on the rationales for their suggestions as well as on the actual mechanics of implementation.³

III

Pools and Portfolio Policies

A pooling arrangement involves a group of organizations coming together either to provide insurance for pool members (e.g., a self-insuring public entity pool composed of a number of cities) or to form a risk purchasing group that buys a portfolio policy with a single aggregate dollar limit to cover multiple properties owned by group members. (Note that a single organization, rather than a pool, may also purchase a portfolio policy with an aggregate limit to cover more than one property.) Thus a municipality or local government association may move in the direction of group coverage for brownfields by:

- Facilitating a pool for different individual private owners and/or redevelopers;
- Forming a pool for publicly owned sites with other local governments; or,
- Purchasing portfolio coverage for its own sites (and possibly some privately-owned properties for which it wants to provide a development subsidy in the form or insurance).

The discussion below, while phrased in terms of ‘pooling’ – which the industry defines as a policy covering different owners – is in most instances equally applicable to developing portfolio coverages.

Problems with Pooling – When group members share a limit, in the event that there are losses incurred by one participant in the pool, coverage may not be available for others. This is why there is a concern over ‘adverse selection’ in pool membership. The term refers to a tendency for parties who perceive a high probability of loss for themselves to seek insurance; those who perceive a low probability of loss tend not to seek insurance:

³ We want to pay tribute here to one of our most valuable and active web site participants who was lost in the World Trade Center on September 11.

BROKER-A: The ones that are looking at a eight or nine figure environmental bill are going to be the ones that want to join. And the ones that have very little historical exposure say, yeah, right. Why would I join a pooling operation where tomorrow City A comes in and they know they've got a cleanup and it turns out to be a five million dollar cleanup. The first time out of the box, the thing is done.

The owners with the least risky sites would be reluctant to share the coverage with others because they would be able to obtain insurance for their single site at affordable rates.

Relative to Pollution Liability coverages for the ongoing operations of organizations, pools involving brownfields are especially complicated due to the unique characteristics of each brownfield site:

BROKER-B: Say you've got 300 cities in Kentucky that want to do this. The issue is, what kinds of brownfields are you going to incorporate? Are you going to cover sites with underground storage tanks with hydrocarbons? Are you going to cover TCE's coming from dry cleaning operations? Are you going to cover chemical manufacturers? All of that has to be discussed ahead of time so you can define your universe. And the broader you attempt to define what your coverage issues are, the more expense you're going to spend because of the unknowns out there.

Thus the advantages of cost reduction associated with group or bulk purchase of protection may be undermined by the diversity of the sites involved in a large pool.

This problem of diversity is especially problematic when pools combine sites in different political jurisdictions. Many local governments do not have enough redevelopable brownfield sites within their boundaries to warrant creating a pool, but this may be true for some states as well, especially if it is determined that pools work best when all sites share common problems with contaminants. With cleanup requirements and liability relief provisions varying across the states, the problems can be massive:

BROKER-C: The easiest thing to do is on a city or metropolitan area basis because, within that area, you'll find a similar type of risk. If you organize it on the state basis, some cities might have a heavy industrial history, while others don't. I'm not saying it couldn't be done on a state basis, but it would be difficult.

BROKER-A: The other unknown is, how are the regulatory agencies in the various states going to look at this? That's your biggest single issue next to adverse selection. If you put a group of cities together from different states, you're dealing with Wisconsin DNR, Iowa DNR, a California water resource agency, etc. And I can absolutely assure you that trying to come up with a common standard among the three states would leave you breathless.

The difficulties encountered in developing a brownfield site pool are thus far more daunting than provision of group health, auto, home or life insurance coverage.

On the other hand, there seems to be agreement that the number of sites necessary to achieve a cost reduction that would warrant the time, effort, and expense involved in creating a pool is not that great:

BROKER-D: If you have ten, thirty, fifty properties, you start to see serious cost savings. But you start to see worthwhile cost savings if you put five sites on a policy.

BROKER-C: If you have, say, 15 or 20 sites, statistically you'll see an advantage. If you have 6 or 7 sites and you have a sub-limit, you're not going to see much of a savings. Unless - say if you have 10 sites and a sub-limit of 2 million for each of them, but you only bring your policy aggregate to 10 million. That means you can pay up to 2 million on an individual site, but no more than 10 million for the portfolio. Then you'll see some benefits.

However one looks at it, while creating pools may be cost-effective and might contribute to the promotion of brownfield redevelopment, the process of designing, negotiating and administering such a program is complex, as this last quote suggests. We will return below to the issue of the capacity of local or state governments, or of the current operators of governmental self-insurance pools, to structure these types of insurance coverages.

'Captives' and Risk Retention Groups – Forming a 'captive' entails an organization or group of organizations (e.g. a city or group of cities) forming their own insurance company. A risk retention group is a type of group captive limited to providing liability coverages. Investment income from loss reserves accrues to the owners of a captive, who are also its insureds. In a group captive, members must be willing to share risks, with the adverse selection problem already cited as a potentially major issue. These sorts of insurance coverage tools are usually established when the insurance coverage needed is not available or is too expensive. The pool provides basic coverage and re-insures 'excess' coverage, buying additional protection beyond that it, itself, can provide. As BROKER-C put it, "Basically, a risk retention group is really a way of satisfying a large deductible."

A major barrier to creation of public captives is that they normally require substantial capitalization and an in-depth actuarial feasibility study. At present, the only brownfields claims experience data is closely guarded by the individual insurance underwriters, so a thorough statistical analysis may prove next to impossible. The study, while costly – if it is even possible, may prove that the idea of forming such a pool is not feasible, so brokers remain skeptical of the prospects:

BROKER-A: I would be highly surprised if you could get twenty cities to each kick in \$100,000 to form a risk retention group. I just don't think it would happen.

BROKER-E: In order to get the coverage costs down per site in a captive or risk retention group type scenario, whoever wants to join this pool is going to have to put up substantial capital up front in order to fund the first layer of coverage, which is what a retention group or a captive does. And I don't think that municipalities are going to be willing....

If they are feasible, however, captives have the potential to be very important for the types of brownfields that constitute the majority of the parcels with real or perceived contamination:

BROKER-E: My guess is that most of those who are saying they want to pool because the price of insurance is too high relative to the deal are looking to redevelop smaller sites - a one-acre small industrial facility, a corner dry cleaner, a corner gas station. Because those sites are smaller, the cost of the insurance is going to be higher relative to the size of the transaction ... I think that the cost for them to put capital into a captive or risk-retention group to get the price down from maybe \$10,000 per site to \$5,000 per site, is not going to be worth it if they've only got three or four sites.

For a city, or group of municipalities with not three or four, but hundreds of such small sites, a

common pattern in metropolitan areas in the ‘rust belt,’ the captives and risk retention group approach may be very valuable.

The difficulty, of course, involves convincing any public sector body to put up a substantial pool of capital to create such an insurance program. Consistent with the site-specific logic that drives most economic development programs, public planning bodies may only see the economic gains on-site attainable through a brownfield reclamation (Meyer 1998). Thus local officials may pursue “highest and best use” on a single parcel without due consideration for neighborhood effects. This approach, for a three acre or larger site, for example, may miss the opportunity to raise neighborhood amenity values and associated property taxes by providing a needed public facility or park and, instead, reuse a site for industrial or other high on-site tax revenue gains (Meyer 2001).

Such a miscalculation and loss of potential revenue, in turn, leads to a lowered willingness to invest in mitigating brownfields (and thus to invest in providing the capital for creation of captives or risk retention groups). The missed economic gains are all the more likely to be present and substantial if the three brownfield acres are not in one single plot, but scattered sites across the community. Brownfield cleanups not only provide amenity values, but also make sites available for cost-effective re-use, thus attracting more funds and people to urban centers and lessening the pressures that produce urban sprawl (National Governors Association 2000).

IV

To the extent that brownfields redevelopment offers an alternative to continued sprawl, it can contribute to more sustainable patterns of urban living (Wernstedt and Hersh 1998). The added investment risks posed by environmental conditions have been found to retard the flow of capital to inner city sites and thus to underutilization of public infrastructure and facilities, as well as fiscal stress and urban spatial expansion (Coffin and Shepherd 1998; Simons and Pendergrass 2000). The environmental insurance that can reduce those risks is increasingly available yet not well integrated into municipal planning and land use policy (Yount, 1999).

The development and dissemination of means of increasing insurance utilization where it is appropriate can contribute to municipal and metropolitan economic development through more sustainable urban land use patterns, higher utilization of existing infrastructure and improved environmental justice conditions in urban cores. The industry demonstrates that the tools are available. However, there are two massive tasks that need to be addressed before the potential of brownfield redevelopment as an alternative to continued sprawl can be more fully realized through the use of insurance for exceptional development risks:

- (1) Educating the potential public creators of pools and portfolios of sites to the benefits and return on investment by the public fisc that such insurance programs covering large numbers of small parcels could make available, and,
- (2) Developing the institutional structures, across agencies within local governments and across local government when geographically broader pooling is warranted, that permit systematic and informed decision-making on risk management and incentive-provision

choices on brownfields, including the use of insurance.

We conclude with brief assessments of the problems and needs associated with accomplishing both these tasks.

Educating Public Officials – We have noted the excessive tendency to focus on single sites in brownfield reclamation efforts. This clearly is not consistent with good planning practice, which should look at sites within an area-wide perspective. However, this myopic vision is not the only perception and understanding problem standing in the way of utilization of risk management tools that could cost-effectively contribute to major economic regeneration.

1. Budget minimization concerns lead local governments not to invest in programs or structures that could save – or even earn – money over time. While the logic of tax increment financing may lead to direct subsidies to individual projects, this approach is not routinely used for far-flung multi-site efforts. Moreover, the approach is still not well understood by many local governments who potentially could benefit from using such funds to assemble a portfolio or to capitalize a captive or risk retention pool as a means of promoting the re-use of a number of different brownfields through a single broad program.
2. The different roles that local public bodies could play in promoting the regeneration of privately-owned, not just publicly-held, brownfield sites are not recognized, despite the prevalence of private ownership of contaminated or environmentally suspect properties. The provision of access to an insurance pool, in particular, may be a subsidy to private owners that may be a far less costly means of inducing redevelopment and re-use than any of the forms of financial subsidy now offered by development agencies and departments.
3. Local and regional planning, whether comprehensive, transportation or land use oriented, continues to be conducted in what remains largely an information vacuum regarding the number and types of properties impaired by real or perceived contamination. Without such information, the implicit and explicit forecasts that inform planning decisions in older cities cannot be accurate, and thus the planning efforts fail to promote the amenity values that could attract the capital and demand for land that such communities need if they are to provide an alternative to sprawl.

The need for education thus is not agency-specific, but involves better informing elected officials, appointed board members and staff in a wide array of local government offices and agencies.

Modifying Institutional Structures – Major inefficiencies arise from miscommunication and lack of coordination across agencies in any one local government: relevant units include those with responsibility for environmental protection, economic development, land use and transportation planning, purchasing and issuance of request for bids on needed services, and risk management. The latter function may be a purchased service, acquired from a government risk pool akin to the captives and risk retention groups discussed above – but the coverages included generally are limited to non-environmental liability and workmen’s compensation policies. Institutional complexity is compounded significantly when multiple jurisdictions are involved in a joint consideration of any program, but especially those, such as brownfield revitalization or

anti-sprawl efforts, with specific geographically-focused impacts. The types of structures and policies that may impede brownfield and other urban regeneration program development are diverse.

1. Lack of inter-office coordination: insurance program development requires coordinated planning and consultation across environment and economic development agencies, purchasing units and risk management offices.
2. Purchasing rules such as requirements for multiple publicly-disclosed bids: since the insurance coverages, especially for pools, are specially manuscripted for each program, the potential underwriters do not want to invest in policy development efforts without some assurances that the costs will be recovered. Moreover, since the proprietary risk management systems set up by underwriters affect coverages available and their costs, the different companies do not want their manuscripted policies disclosed to their competition.

3. Inter-jurisdictional competition for new businesses and residential developments: local governments routinely compete for economic development, and these past patterns of behavior undermine the possibility for collaboration in formation of multi-governmental pools that could benefit brownfields in a number of different jurisdictions.
4. Public self-insurance pools involving a group of local government units do exist, but their existing structures work for high frequency, low cost risk events, and brownfields pose low frequency, high cost risks. The pools may be the locus of the only insurance expertise at the local level in many urban settings, so harnessing their knowledge as advisors to their member governments in the development of brownfield coverages will be critical.

Without a better understanding of the benefits that may accrue from remediation and reclamation of small scatter-site brownfields, there will be little motivation for these types of institutional changes. Planners thus can have a major impact on the provision of alternatives to sprawl through their roles as providers of information and understanding, and through planning for new real estate value can be creation across a region through strategic investment in redevelopment of brownfields.

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