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Brownfields Redevelopment in Wisconsin: A Survey of the Field

Kris Wernstedt, Lisa Crooks, and Robert Hersh

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Abstract

As the third paper in our three-part series on Wisconsin brownfields, this paper reports the results of a survey on the objectives of brownfields redevelopment, constraints to the redevelopment, the role of the state's Department of Natural Resources (DNR), and institutional controls. The 260 survey respondents include elected officials, staff from economic development and planning agencies, attorneys, private sector representatives, and professionals at nonprofit organizations. We find that: 1) respondents value both economic and environmental gains associated with brownfields redevelopment; 2) the high costs of cleanup are the principal barrier to brownfields redevelopment; 3) no single factor stands out as constraining DNR's ability to oversee cleanups; 4) owners are more likely to be aware of institutional controls implemented through deed restrictions than through an electronic registry; and 5) attitudes regarding changes in DNR behavior along dimensions of flexibility, fairness, knowledge, and willingness to negotiate are more rather than less positive.

Key Words: Brownfields, contamination, hazardous waste, regulatory reform

JEL Classification Numbers: Q24, Q28

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1. Introduction

Critics argue that traditional federal regulatory approaches have discouraged private parties from becoming involved in “brownfields” sites. These sites are defined as “real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant” (42 *U.S.C.* §9601, amended 2002). Owners of the properties and prospective buyers, fearing liability for expensive cleanups, often opt not to develop them. Yet, left unattended, such sites may pose threats to public health and the environment and depress the economy of local neighborhoods. Moreover, existing public infrastructure may remain underutilized even as rural or greenfield (uncontaminated) sites attract new development, contributing to spatial segregation and continued underinvestment in older urban and industrial areas. By most accounts, this problem bedevils communities across the country. The U.S. General Accounting Office (1987) has reported that the nation has between 130,000 and 450,000 potential hazardous waste sites, based on data collected from several federal agencies in the 1980s. Later estimates have placed this figure in the range of 500,000–600,000 (Simons, 1998), or even as high as 1 million sites (www.epa.gov/compliance/resources/faqs/cleanup/brownfields, accessed 4/23/03).

In response to the abundance of contaminated sites and the problems or missed opportunities they entail, all but two states have developed a range of initiatives under the rubric of brownfields and/or voluntary cleanup programs since the late 1980s. These operate in a less burdensome and intrusive fashion than longer-standing enforcement-led programs under federal and state law. They typically scale back environmental requirements by tailoring cleanup requirements to the expected future use of the properties rather than requiring, for example, the

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same cleanup at a parcel whether it is slated for development as an industrial park or as a playground. The new programs may further provide some form of liability release upon state approval of cleanup and sometimes delegate state regulatory functions—including monitoring and oversight of cleanup activities—to licensed consultants. Many states also offer incentives to spur private investment in the inner-city communities where contaminated properties often are located.

This paper reports the results of a survey of a range of individuals who are involved or familiar with brownfields redevelopment in the state of Wisconsin. Our questions explore perceptions of the brownfields problem in the state and efforts to address it. This is the third and final part of our larger study examining how Wisconsin brownfields policy and programs have developed and evolved in the last 25 years. Part one of the larger study discusses the history of statutory and regulatory reform in the state—starting with the passage of the Hazardous Substance Spills Statute in 1978, and running all the way to current discussions in the state to modify existing brownfields cleanup requirements—while the second part uses a series of case studies to explore the implementation of cleanup and redevelopment under the state's brownfields initiatives. In this paper, then, we move beyond a case study focus and capture a broader set of attitudes toward brownfields redevelopment in the state.

The main part of the paper starts in section 2, where we discuss the administration of the survey, including the sampling frame, pretesting, survey protocol and design, and possible biases. We then summarize characteristics of respondents in section 3, including response rates and the range of organizational homes that these respondents come from. In section 4, we begin to present the substantive results of the survey, focusing on general issues related to redeveloping contaminated properties such as the perceived benefits of such redevelopment and barriers to it. We continue in section 5 with a discussion of findings from our questions related to the principal regulatory agency involved in brownfields in Wisconsin, the state's Department of Natural Resources (DNR). We conclude with brief summary comments in section 6. The Appendix furnishes full survey results.

2. Background to Survey

While nearly all the survey results that we report in this paper were collected in the two-month period from April 29 to June 30, 2003,¹ instrument design, pretesting, and development of the sampling frame had taken place over the preceding 18 months. During this period, the focus of the survey changed considerably. Understanding this evolution is useful for interpreting the findings and understanding the motivations and limitations of our analysis.

2.1 *Developing the Survey Instrument*

In our original study proposal and preliminary work, we envisioned a survey that would target parties who had redeveloped contaminated property in Wisconsin and solicit their attitudes toward state efforts to encourage such redevelopment. This emphasis was consistent with our overall interest in the development and negotiation of Wisconsin's regulatory framework for addressing contaminated land and the needs of private developers and city redevelopment agencies in this realm. However, our early work revealed a limited range of readily identifiable projects on contaminated land and difficulties in securing the cooperation of individuals involved on the development side of these projects, which caused us to reevaluate our initial approach.

In order to enlarge the population of individuals from which we could draw a sample, we broadened our survey objectives to include local officials and others involved in land development more generally. In particular, we reoriented our effort toward capturing experiences and attitudes related to institutional controls, often essential elements of a remedial action. In the brownfields context, these controls may include a variety of measures—zoning restrictions, deed notices, easements, and building and permitting requirements, for example—that help control exposure to contamination left on a site. The long-run efficacy and viability of many of these measures is uncertain, due in part to their relatively recent application and to the fact that they may rely on parties that are not traditional players at contaminated sites (for example, much of the responsibility for monitoring and enforcing institutional controls may rest with local officials). By drawing on the experiences of individuals involved in the implementation of more generic land use controls, we have a wider population from which to sample, even though the track record of those individuals with respect to institutional controls in the context of contamination may be limited.

¹ Four of our 263 respondents completed the questionnaire in July 2003.

We developed a prototype survey instrument in May 2002 that was based on this reorientation toward land control measures. Most questions targeted factual issues related to building code requirements, zoning, groundwater use restrictions, and deed restrictions, although we also included several related to environmental concerns, including contaminated areas. Topics included agency mission and style, the detection of land use control violations, government response to violations, barriers to enforcement of the controls, and trends in their use and efficacy. Our targeted population consisted of planners, economic development officials, city attorneys, city managers, records clerks, and other local officials. Using personnel contacts and volunteers identified through the listserve of the Center for Public Environmental Oversight, we circulated the draft instrument for review and received comments from 11 individuals from academia, the public sector, and private industry.

Based on suggestions received from the reviewers, we extensively revised the instrument. This involved significant reformatting—shortening the instrument considerably and eliminating most open-ended questions—as well as substantive changes. With respect to the latter, we focused the instrument much more on implementation—particularly of local building permit requirements—and eliminated most questions that dealt with agency mission, motivations of private parties, and enforcement triggers and style. We also redirected a number of questions to reflect our emphasis on perceptions and attitudes. We then ran a pretest of the survey on our website in November 2002, receiving responses from 14 individuals from both the public and private sector.

The principal findings from the pretest—which we presented in an institutional controls panel at Brownfields 2002, the national brownfields conference—are that:

- homeowners are much more likely to violate building code requirements than contractors,
- high costs of compliance and misunderstanding and unawareness of these requirements drive noncompliance,
- less than 80 percent of parties subject to the requirements would comply with them if they believed they would not be detected for violations, and
- a majority of respondents believe that 95 percent or more of structures in an area undergoing alterations have all of the necessary permits for the alterations.

These findings, while interesting in their own right, prove difficult to cleanly translate to the context of contamination. In particular, the apparent difference between the high percentage of

structural alterations that have received all necessary permits and the significantly lower percentage of parties who would comply with more general code requirements absent the threat of detection suggests a problem in extrapolating the findings to contaminated sites. Most local officials have little experience with institutional controls at such sites, even when they have dealt with contamination and regulators in the broader context, and information on the long-term implementation of institutional controls at contaminated sites is very limited. Monitoring and enforcement offer a long-standing and unresolved problem, and detection probabilities are highly uncertain. The relatively high rate of potential violations of building code requirements implied by the pretest results also suggests that the responses to questions related to such generic controls may mislead because they fail to differentiate relatively minor code violations from more serious violations such as inadequate foundation excavation that would be most relevant at contaminated sites.

This realization and two additional features conspired to alter our survey approach once again. First, the regulatory environment of contaminated land continued to evolve in Wisconsin during our initial vetting of the survey in 2001 and our pretest in 2002. Although a wide array of institutional controls continued in practice at sites, new administrative rules in this time span shifted the landscape by changing the documentation of certain types of controls. These rules allowed owners to record restrictions in an electronic registry rather than on a deed instrument at sites with contaminated groundwater in some cases. At sites with contaminated soil, the electronic registry alternative supplanted previous requirements for deed notices in some situations. Second, our interviews of dozens of individuals for the first two parts of our overall study—the regulatory history and case studies—suggested that in fact we could draw on a rich set of experiences at the local level vis-à-vis contamination if we enlarged our population of interest beyond just the principals at the site.

With the removal of our original property-specific screen, our population of interest broadened to include individuals, chiefly at the local level, who may be involved in contaminated land regulation and/or redevelopment. We thus returned partway to our original emphasis on attitudes about brownfields, aiming to document perspectives on the goals and constraints of brownfields development and state efforts to encourage it. Given the continuing importance of institutional controls in brownfields practice nationally and within Wisconsin—and the shift in state policy for recording restrictions related to soil and groundwater contamination—we also included two targeted questions on institutional controls. A copy of the instrument appears in the appendix.

2.2 Sampling Frame and Survey Protocol

We identified potential respondents from seven key groups likely to have experience with brownfields: elected and administrative officials, staff from economic and community development agencies, planning and zoning officials, attorneys, private sector representatives, professionals at nonprofit organizations, and finance experts. Publicly accessible records available on the Internet and from the League of Wisconsin Municipalities allowed us to identify individual in the public groups, while information from commercial associations such as regional homebuilders associations and the Commercial Association of Realtors helped us target individuals in the private sector.

Although our approach constitutes a convenience sample in some respects—eligible respondents had to have email contact information that we could readily access—we stratified the sample in two important ways. First, we attempted to garner completed surveys across the different classes of respondents in roughly equal proportions. Second, we aimed for a regional breakdown of respondents that plausibly mirrored the distribution of contamination across the state. Wisconsin does not maintain a database of brownfields sites, so we used information from DNR’s Bureau for Remediation and Redevelopment Tracking System (BRRTS).² Using DNR’s five regions as our geographic stratifier, the Southeast Region, which includes the Milwaukee metropolitan area, accounts for nearly one-third of the sites, followed by the Northeast, West Central, South Central, and Northern regions. Table 1 shows that responses closely track this stratification.

The instrument itself consists of 15 questions, and is designed to take less than 15 minutes to complete. Most answers require the respondent to select from a list of options or to provide a rating on a scale of one to five. The initial eight questions elicit background information, including the respondent’s location within the state, occupation, professional experience, and familiarity with contaminated properties. Five multi-part questions follow, three addressing constraints to redeveloping contaminated properties and two addressing the role of the Wisconsin DNR in redevelopment. Two final questions address institutional controls. Respondents have the opportunity to furnish comments at the end of the survey.

² BRRTS (available at <http://www.dnr.state.wi.us/org/aw/tr/brrts/index.htm>, accessed May 5, 2003) tracks more than 54,000 other sites of potential interest, including spills, leaking underground storage tanks, and sites from the Environmental Repair Program.

2.3 Administration of Instrument

To maximize the number of contacts, we solicited participation in the survey through email. This entailed sending out individual email invitations to participate in the survey, with the invitation including a short description of the project and a unique code to register a survey response. Our solicitations went out in several waves from April 29th to May 20th, with each wave followed by a brief reminder to nonrespondents two weeks after the initial contact. In addition, we circulated surveys to key informants interviewed in the first two parts of our study.³

Respondents could choose to complete the survey in one of two ways. First, our invitations included the address of an RFF website hosting an electronic version of the instrument. This web version—designed using the Perseus Survey Solutions software—allowed multiple users to respond simultaneously. It also allowed us to use skip patterns—asking certain questions based on the answers that respondents provided in earlier parts of the survey—and to force respondents to provide answers before going on to later parts of the survey. This function substantially reduced post-survey cleaning of data and thus the cost of survey administration. A second option for potential respondents was to request the survey via email attachment (in Adobe PDF format), which, after printing, could be completed and mailed back to us with prepaid postage. Less than 2 percent of respondents chose this second option.

Table 1. Responses by Region		
Region	Number of Respondents	Percentage of Respondents
North	24	9%
Northeast	60	23%
West Central	48	18%
South Central	45	17%
Southeast	86	33%
Total	263	100%

³ This targeting of respondents is a “choice-based” approach in which we deliberately choose individuals to add to our sample rather than rely solely on a random sample of respondents. In formal statistical analysis, such a choice-based approach requires special treatment so that it does not lead to biased estimates of relationships between variables.

Our email invitations assured respondents that their answers would be confidential and that we would not release results that could identify them. However, we assigned a unique code to each potential respondent so that we could track responses and identify individuals and target groups for followup contact. Individual identifiers are not included in the survey database. In our final question, respondents could indicate that they would like to receive survey results, in which case they had to provide contact information. Such contact information also does not appear in the survey database, although a binary variable indicating whether the respondent requested results does. Slightly less than two-thirds of respondents made this choice.

Table 2 shows the contacts, responses, and response rate for each of seven major respondent groups.⁴ Our overall response rate is 20 percent, though rates for individual groups vary from 11 percent for private sector firms to 34 percent for county and city planners. The relatively low overall completion rate is driven in part by the very limited response of developers, consultants, and real estate brokers, who collectively account for over one half of our nonrespondents. For many individuals in this group, brownfields redevelopment likely is not an area of interest, since we were unable to identify beforehand which potential respondents out of the large universe of private sector representatives might have experience with brownfields. For all groups, the relatively low response low rates obviously may reflect competing demands on time that make completing the survey a low priority.⁵

⁴ Respondents could specify an anonymous, generic survey code that did not identify the group to which they belonged. Forty four individuals chose this option, while 219 used the codes we assigned.

⁵ Private attorneys constituted another class of potential respondents. However, our effort to administer the survey to them through a professional association did not reach fruition, so we have no responses from this group.

Table 2.			
Responses and Response Rate by Category			
Category	Persons Contacted	Responses	Response Rate
Private Sector Development (builders, consultants, realtors)	495	54	11%
Economic and Community Development	160	53	33%
County and City Planning and Zoning	128	44	34%
County and City Administration	105	26	25%
Legal (municipal)	105	21	20%
Nonprofit (environmental, community and tribal)	47	11	23%
Finance	46	10	22%
Total	1,086	219	20%

This latter consideration could influence the survey results, in that those particularly motivated to complete the survey—individuals who feel strongly about contamination—are more likely to appear in our response set. Such motivation may depend on the amount of experience that individuals have with contamination, as well as general experience and attitudes toward topics in our survey. For example, those with strongly negative or positive attitudes toward the Wisconsin DNR may respond in higher numbers even if they have no experience with DNR in the realm of contamination. We can control for these potential biases to some degree with information we have on each respondent's familiarity with contamination as well as profession and experience.

A more vexing problem is that we lack responses from those for whom 15 minutes of attention to completing the survey imposes an unacceptably high cost. "Time is money," yet many of the potential respondents for whom this refrain is most apt may be intimately familiar with closing deals on redeveloping land that is contaminated. For this reason, as noted above, we also targeted individuals whom we identified from our interviews as being particularly involved in brownfields redevelopment deals, particularly those from groups underrepresented in our sample.

3. Respondent Background

The survey asked respondents to describe the type of organization for which they work.⁶ Table 3 shows that over half of the responses came from employees of counties or local municipalities and 27 percent from the private sector. Representatives in state government, tribes, and other groups constituted the remainder. Among those in the public sector, a plurality work in planning or zoning, followed by economic or community development, administration or finance, and elected office. A plurality of private sector respondents are environmental consultants, followed by developers and realtor/brokers. More than 80 percent self-identified as possessing at least moderate familiarity with contamination and about 75 percent indicated that they had 10 or more years of professional experience.

We also have some indication of the types of geographic settings that are familiar to respondents. The bulk of our questions on substantive issues related to contamination asked the respondent to answer in the context of a familiar local area, with an introductory question asking the respondent to assign this area to one of six possible categories that differ in population, jurisdiction, and rural/urban setting (these categories are not necessarily mutually exclusive). For the 54 percent of all respondents who specified a town, village, or municipal setting, the majority indicated a setting with a population of 10,000 or more. For the 34 percent of respondents who indicated a county setting, the majority indicated a population of 50,000 or more. The remaining 13 percent of respondents indicated a multi-county rural setting.

⁶ This question uses organizational categories similar to the groups we used to design our sample, although responses rest on self-identification and thus may differ from the group in which we placed the respondent a priori.

Table 3. Responses by Type of Organization		
Organization	Number of Respondents	Percentage of Respondents
State government	9	3%
County government	49	19%
City, town, village, or other local government	89	34%
Private sector for-profit or nonprofit	71	27%
Tribal or inter-tribal organization	4	2%
Other	41	16%
Total	263	100%

The percentages in each of the settings are not fully comparable to the distribution of population across Wisconsin as a whole because each respondent was required to select a single category pertaining to his or her answers, even if another category also may have applied. In addition, the selection does not necessarily represent the respondent's own residential location. Notwithstanding this qualifier, roughly 47 percent of Wisconsinites live in communities with less than 10,000 residents and 53 percent in communities with 10,000 or more residents, which is similar to our breakdown. On the other hand, 21 percent of Wisconsin residents live in counties with less than 50,000 residents, which is roughly half of the analogous percentage of our respondents selecting a county setting with fewer than 50,000 residents. Finally, the 32 percent of Wisconsin residents living in rural areas is more than twice the percentage of respondents who chose a rural setting.

4. Results: The Contamination Context

Our survey aimed squarely at capturing respondents' perceptions toward the redevelopment of contaminated property. In particular, we wanted to learn more about the respondents' objectives for redevelopment, their views about the experiences of public and private developers in the context of brownfields, their attitudes toward redevelopment constraints, and their understanding of DNR's role and approach to contaminated property. In this section, we discuss the first three of these categories, which pertain to general issues in redeveloping contaminated property, deferring until section 5 our discussion of DNR issues.

4.1 Reasons for Redevelopment

Table 4 summarizes the importance respondents placed on each of 10 possible reasons often cited for redeveloping contaminated properties. Possible responses run from one (not important) to five (very important), although the table shows only the percentage rating the reason as “important” or “very important.” For five reasons, more than 75 percent of respondents rated the reason as important or very important. These five represent a range of problems that contaminated properties may present to communities: environmental, in that the contamination could present a threat to the surroundings and public health; visual, in that the property may degrade the visual image and perception of a neighborhood, thus adversely affecting existing businesses and quality of life for residents; and financial, in that each property hosted an activity that once produced revenue for a community but now remains underutilized.

If we break down our sample into subsets based on contamination familiarity and organization type, the majority of each subset also views each of the five reasons as important or very important. However, we can discern significant differences among these subsets using contingency tables and chi-square tests. For instance, nearly three times as many (in percentage terms) respondents with weak familiarity with contamination—those who rated themselves 1 or 2 on the scale of 1 to 5—indicated that increasing tax revenues was not an important reason for redeveloping contaminated properties as did respondents with strong familiarity (those who rated themselves 4 or 5 on the familiarity scale). A significantly higher percentage of respondents with high contamination familiarity, relative to those with low familiarity, indicated that raising tax revenues was an important reason for redeveloping contaminated property. Conversely, higher percentages of those with weaker familiarity, relative to those with strong familiarity, indicated that reducing environmental and health threats were important reasons to redevelop contaminated properties. For example, less than 40 percent of respondents strongly familiar with contamination issues indicated that reducing environmental risk was an important reason for redevelopment, while more than half of the respondents with weak familiarity indicated this.

A different dynamic plays out among organizational types. Members of nonprofit groups more frequently rated protection of environmental and public health as important reasons for redevelopment than did developers, attorneys, and real estate brokers. The latter group collectively was twice as likely as nonprofit group members to indicate that these were not important reasons for redevelopment. Public officials fell between these two groups in the importance that they placed on the reasons.

Table 4. Reasons for Redeveloping Contaminated Properties	
Please indicate your view of the importance of each of the following reasons why contaminated properties should be redeveloped in your local area, <i>using a scale of 1 (not important) to 5 (very important)</i> .	
Reason	Percentage of respondents selecting “important” or “very important”
increase tax revenue	78%
more efficient use of infrastructure	76%
remove eyesores	80%
create jobs	70%
reduce public health risk	75%
reduce environmental risk	79%
reduce sprawl	49%
diversify business mix	39%
promote greenspace	43%
part of area-wide redevelopment agenda	54%

Less than 50 percent of respondents placed a high importance on three of the 10 reasons—to diversify business mix, promote greenspace, and reduce sprawl—for redeveloping contaminated property. However, the proportion doing so among different subgroups varied considerably. For example, respondents with strong familiarity with contaminated properties were more than twice as likely as those with weak familiarity to indicate that diversification was an important reason. In addition, a strong majority (59 percent) of respondents in less populated areas rated the sprawl-related reason as only moderately important at best, while an equally strong majority (58 percent) in more populated areas rated it as important.

4.2 Experiences with Redevelopment

Although the above discussion implies that respondents provided different rationales for supporting brownfields redevelopment, nearly all of the respondents seemed to believe that each of the reasons we posited had some validity. For each of the 10 reasons, 90 percent or more of respondents indicated the reason was at least “slightly important.” This general agreement likely reflects the inoffensive nature of the reasons and the fact that the Likert scaled questions do not

force tradeoffs among choices—that is, any respondent could deem each reason “very important.”

We see slightly more variation in responses across the entire Likert spectrum in the answers to our more general question on viewpoints and experiences with contaminated land. In this question, we presented 13 statements about contaminated properties and asked each respondent to indicate his or her agreement with the statement on a scale of 1 (completely disagree) to 5 (completely agree). At least 10 percent of respondents expressed complete disagreement with one or more of the following statements:

- There is little contaminated property in my local area.
- Most developers are not willing under any condition to redevelop a property that they believe is contaminated.
- Site owners are required to disclose the results of site investigations to DNR if contamination is discovered. Such requirements impede the market for redeveloping contaminated properties.
- Most developers who redevelop contaminated properties receive a lower rate of return on those redevelopments than they do on uncontaminated properties.
- A developer who is purchasing a site that is contaminated generally knows the estimated cleanup cost he will incur before he takes ownership of the site.

On the other hand, at least 10 percent of respondents expressed complete agreement with one or both of the statements related to site investigations and developer knowledge of cleanup costs. We also see substantial differences of options when we include less extreme positions. For example, at least one-third of respondents expressed complete or some disagreement, and another one-third expressed complete or some agreement, with one or both of the two statements related to site investigations and cleanup costs. A similar split emerged over the statement related to a developers’ willingness to redevelop a contaminated site.

On the positive side, several of the statements related to financial aspects of redeveloping contaminated property garnered a high level of agreement. Nearly one-half of respondents completely agreed and another 40 percent agreed with the statement:

- More contaminated sites would be redeveloped if more public money were available for site cleanups.

And over three-quarters completely or partially agreed with statements:

- The redevelopment of contaminated properties usually requires financial support from local or state public agencies.
- More contaminated sites would be redeveloped if more public money were available for environmental site assessments.
- Most redevelopments of contaminated properties involve a negotiation between the developer and the state government about the amount of cleanup required

For those who characterized themselves as having very strong familiarity with contaminated property in their local area, more than 70 percent completely agreed with one or both of the two statements related to the availability of public money for site assessments and cleanups.

In addition to these statements, strong majorities of the respondents agreed with the statements:

- Developers who redevelop contaminated property are more willing than the average developer to take large risks.
- Gaining state regulatory approval of cleanups of contaminated properties is a bigger problem than gaining local approval of design and site plans.

Collectively, these results suggest that although wide differences exist among the respondents' experiences with redeveloping contaminated properties, most of the respondents believe that funding to support remediation or redevelopment is critical. A significant majority also appears to recognize the risk-taking characteristics of developers who undertake the redevelopment of contaminated land and the centrality of negotiation between these developers and the state to this process.

4.3 Barriers to Development of Contaminated Property

Our final question related to the general contamination context pertains to possible constraints that developers of contaminated property may face. In this question, we asked respondents to indicate the barrier that each of nine factors may pose to redevelopment of contaminated property in their area. Possible answers ranged over a five-point scale, with 1 indicating no constraint and 5 a very important constraint.

Table 5 highlights the results of this question by displaying the percentage of respondents rating the factor as an "important" or "very important" constraint. Consistent with the results related to financial issues cited in the above section, 84 percent of respondents viewed the high

cost of cleanup as at least an important constraint, with most of these viewing it as “very important.” In addition, half or more of respondents selected the complexity of cleanup standards, the length of time needed to get cleanups approved, the possibility that additional cleanup will be required in the distant future, or possible EPA involvement as important constraints as well. Each of the last four factors clearly may influence project costs.

Table 5. Factors Constraining Brownfields Redevelopment	
Across the state, various factors may make it difficult for developers to redevelop contaminated properties. Please rate the level of constraint in your local area of each of the following items. <i>Use a scale of 1 (not a constraint) to 5 (very important constraint).</i>	
Factor	Percentage of respondents selecting “important” or “very important” constraint
complexity of cleanup standards	50%
inconsistencies in cleanup standards	40%
length of time needed to get cleanups approved	66%
high cost of cleanup	84%
lack of cooperation from local government	15%
community opposition	11%
possibility that additional cleanup will be required in the distant future	55%
unfavorable lending terms	36%
possible U.S. EPA involvement	50%

At the other end of the scale, the majority of respondents indicated that lack of cooperation from the local government and/or community opposition are at worst minor constraints to the redevelopment of contaminated property. This is particularly acute in the case of the community opposition constraint, an interesting finding in light of environmental justice concerns that have been raised in some communities and, more generally, the perception that neighborhood groups frequently oppose brownfields development. Our results admittedly may reflect the relative paucity of neighborhood and environmental justice representatives in our sample. However, if

we examine answers from the 23 respondents in our sample who indicated they worked at nongovernmental organizations, most of this subgroup also indicated that community opposition is a minor constraint at worst. A more problematic sampling issue may be evident in the small percentage of respondents who identified a lack of cooperation from officials in local agencies as an important constraint. More than half of our respondents represent such groups. Only 12 percent of these respondents rated the lack of cooperation as an important constraint, compared to 23 percent of private sector respondents.

In addition to these numerical results from our question on posited constraints, comments from individual respondents also indicated that some have encountered problems navigating the redevelopment programs themselves. For instance, one environmental consultant found it difficult to understand and use some of the brownfields initiatives because they were divided into so many funding sources. Another's comments suggested that some of the programs lacked visibility and were difficult to implement.

5. Results: The Involvement of the Wisconsin DNR

Since the mid-1990s, the approach that the Wisconsin DNR has taken on contaminated properties has evolved. This evolution has been hastened by formal legislative, regulatory, and programmatic changes. For example, statutory amendments during this period clarified and provided liability relief to certain key parties, while state funding for site assessment grants prompted more interest in brownfields across the state. But this evolution in brownfields policy can also be explained by more informal shifts in the behavior and attitudes within DNR. The final part of our survey targets both types of changes. This includes questions on respondents' impressions of general constraints that DNR faces in its oversight of contaminated land, their attitudes toward one specific practice of DNR related to institutional controls, and their perceptions of how DNR's behavior in the context of contaminated properties has changed over time.

5.1 Constraints to DNR Oversight of Contaminated Properties

A variety of obstacles, some internal to the agency and others reflecting external pressures, could impede DNR's oversight of cleanup at contaminated properties. We asked our respondents to provide their impressions of each of seven possible constraints to the ability of DNR to oversee cleanups in an effective and timely fashion, using a scale of 1 (not a constraint) to 5 (very important constraint). Table 6 displays the aggregate results across all respondents.

Table 6.
DNR Constraints

The DNR may face a number of constraints to overseeing cleanups at sites in your local area that are contaminated. Please indicate the importance of each of the following possible constraints to the ability of the DNR to oversee cleanups in an effective and timely fashion.

Constraint	Percentage of Respondents				
	not a constraint		moderate constraint		very important constraint
inadequate funding for staff	6%	5%	30%	31%	27%
inadequate funding, nonpersonnel needs	8%	11%	34%	31%	16%
Insufficient expertise among staff	10%	21%	36%	21%	13%
pressure from political leaders	6%	20%	35%	23%	16%
lack of authority	21%	23%	30%	21%	6%
lack of support from the general public	15%	27%	30%	18%	10%
lack of interagency coordination	5%	16%	37%	25%	16%

Overall, no single barrier stands out as being particularly egregious or, conversely, appears to be universally believed as insignificant. From the table, we can see that less than 30 percent of respondents deemed any single barrier as a very important constraint, although a majority of respondents indicated that funding inadequacies related to DNR staffing was an important or very important constraint. At the opposite end of the scale, no barrier was identified as “not a constraint” by more than 25 percent of respondents. However, a sizable minority of more than 40 percent of respondents identified one or both of two constraints—a lack of authority and a lack of public support—as either no constraint or a minor constraint at worst.

Stronger opinions at both ends of the continuum show up in subsets of the sample, mostly with respect to whether constraints are viewed as being minor. Generally, those with strong or very strong familiarity with contaminated property tended to downgrade the importance of most constraints, with the median response across the seven constraints being a minor constraint (at worst) for more than one-quarter of these respondents. Over half of this group viewed the lack of authority as at worst a minor constraint, and almost half viewed the lack of public support in this way. Conversely, those with the least familiarity with contamination tended to upgrade most of the constraints relative to those with more familiarity. Less than 12 percent of this group had

a median response of a minor constraint across the seven constraints. Significantly fewer of those with the least familiarity indicated that lack of authority or lack of public support were minor constraints, and more cited political pressure as an important or very important constraint.

Individual comments revealed several other possible barriers, including the overlapping involvement of the Department of Commerce—a role, according to one respondent, that may “weaken DNR’s authority and oversight”—and legislative constraints on the agency. Several others mentioned site peculiarities that complicate DNR’s efforts, such as the possibility that a migrating plume could re-pollute a closed site.

5.2 Institutional Controls

In documenting the attitudes of survey participants toward institutional controls, we face a quandary. On the one hand, as noted in our introduction, many survey participants may have an informed understanding of generic land use and code restrictions, but these restrictions may not translate well to a situation where the controls are used to protect against exposure to residual contamination. On the other hand, hypothetical questions positing institutional controls specific to contaminated sites may do poorly in capturing the efficacy of the controls because respondents lack a convenient metric with which to assess it. This poses a dilemma for understanding institutional controls. We simultaneously want to ask about institutional controls in the context of contamination—which might require some education of survey participants to highlight the use and importance of the controls—and to glean insight into how well such controls might be monitored and enforced over the long run after initial attention to them dies down and they become part of the normal routine. The progress of the survey instrument described in the introduction affirms these difficulties.

The question on institutional controls that we ultimately included addresses this dilemma by focusing on the difference between two alternative implementation strategies. These alternatives differ in the technology of implementation and reflect two approaches that DNR has used at contaminated properties. As we describe in more detail in our paper on the evolution of Wisconsin’s brownfields policy, DNR formerly required the placement on the property deed of language that restricts what activities or land uses can take place at many sites where residual contamination exceeded enforcement standards. This was agency practice in the 1990s at certain sites that qualified for closure. However, administrative rule changes that took effect in 2001 required that these restrictions be placed instead on an electronic GIS registry at sites with residual groundwater contamination where natural attenuation is being used to drive the

contaminant concentration below an enforceable standard.⁷ Well drillers are required to access this registry through their normal enquiries with the Diggers Hotline—all parties, including developers, purchasers, and the public can access it over the Internet—and if contamination is found, they are required to obtain special permits from DNR before installing a well. This in part is to ensure that contaminated water is not used for drinking. In addition, parties in commercial or industrial real estate transactions who continue to conduct due diligence now also check the GIS registry. Restrictions related to soil contamination at most qualified closed sites remain on deed instruments and, with rule changes in 2002, these sites are also listed on the DNR’s electronic registry.

Our survey posed a question on each of these approaches, asking the respondent to indicate the likelihood of a typical business property owner being aware of the restrictions five years after their imposition.⁸ Responses for each of the two alternative approaches ranged across the scale of 1 to 10, with 1 connoting “certain to be aware of restrictions” and 10 connoting “certain to be unaware of restrictions.” These responses, as we noted above, are difficult to interpret in isolation, since the scaling may not be consistent across respondents. More usefully, we can examine for each respondent the difference in the likelihood between the two institutional control approaches of the property owner being aware of the restriction five years later.

Table 7 summarizes these results. Overall, more than 50 percent of respondents said that business owners likely would be more aware of a restriction placed on the deed rather than an electronic registry. Less than 20 percent said that the electronic registry would promote more awareness, and the remainder said the two technologies are equivalent with respect to awareness. When we examine subsets of our sample based on contamination familiarity, one and one-half times (in percentage terms) as many respondents with less familiarity with contaminated properties, relative to those with more familiarity, indicated that the owners would be more

⁷ Natural attenuation includes a number of natural processes to degrade contamination and/or limit its movement, in this case in groundwater. These processes include dilution, dispersion, sorption, precipitation, volatilization, biodegradation/biotransformation, and abiotic degradation/transformation (Wisconsin Department of Natural Resources, 2003).

⁸ Based on evidence from our November 2002 pretest, results likely would differ if the question posited a private homeowner rather than a business owner. In that pretest, respondents almost universally indicated stricter adherence to codes and regulations among business and commercial owners than among individual homeowners. In addition, as the text notes, DNR rules have changed more substantively on institutional controls related to groundwater contamination than on those related to soil contamination. The text of our question included both soil and groundwater contamination, so results may have differed if we had separated the two.

aware of restrictions on the electronic registry. Conversely, more respondents with strong familiarity indicated that owners would be more aware of the restrictions on deeds. In the case of those with the most familiarity—a 5 on the 1 to 5 scale—nearly 8 percent said that business owners likely would be more aware of a restriction placed on the deed rather than an electronic registry.

Table 7. Awareness of Land Use Restrictions	
Q1. How likely is it that the typical business property owner in your local area would be aware of land use restrictions 5 years after the language was placed on his/her property deed?	
Q2. How likely is it that the typical business property owner in your local area would be aware of land use restrictions 5 years after the language was placed on an electronic registry but not on the property deed?	
<i>Use a scale of 1 (certain to be aware of restrictions) to 10 (certain to be unaware of restrictions).</i>	
<i>Difference in Responses to Questions on Deed and Registry</i>	Percentage of Respondents
More likely to be aware of restriction on electronic registry	18%
Equally likely to be aware of restriction on deed or electronic registry	29%
More likely to be aware of restriction on deed	53%
Total	100%

5.3 DNR's Institutional Culture

Our final set of results shed light on how respondents assess changes in DNR's approach to contaminated property. To capture these perceptions, we provided 13 statements for each respondent to evaluate, with each statement bounded by end points of a continuum of change from "less" to "more" of the respective behavior. Our time period is from mid-1990s to the present. Thus, for example, one of our questions asked the respondent to indicate on a five-point scale whether the behavior of DNR today relative to its behavior in the mid-1990s with respect to contaminated properties was "less thorough" (1) or "more thorough," (5), with 2, 3, and 4 as intermediate choices. Overall, this proved to be our most difficult question on the survey judging by the comments we received. Because the question asked for a comparison over a substantial period of time, a number of respondents noted that they had not been in the state long enough to discern trends and others indicated that they had insufficient interaction on contaminated land with DNR in the period to make an informed judgment.

Notwithstanding these problems, Table 8 presents summary results of the question, aggregated to a three-point scale. A relatively large proportion of respondents answered "no

change” for many of the behaviors; more than 40 percent gave that response on 11 of the 13 items. This high proportion in part reflects respondents’ insufficient interaction with DNR on contaminated land. Using as a summary statistic each respondent’s median response across the 13 behaviors, we can see that more than half have a median response of 3, or “no change.” Thirty-five percent of respondents have a median response of 4 or 5, while only 11 percent of respondents have a median response of 1 or 2.⁹

If we ignore the “no change” category, we see a clear asymmetry for those who did indicate changes. Consistent with the previous point, each of the 13 behaviors had a higher proportion of respondents who answered with higher numbers, indicating a trend to generally positive behavior. In two cases, the trends were particularly notable. Six times as many respondents said DNR is more knowledgeable than less knowledgeable today with respect to contaminated property than it was in the mid-1990s, and four times as many think DNR today is more thorough than less thorough. Even for behaviors with the highest proportions indicating negative trends—less flexibility and ease of working relationship, for example—half as many respondents indicated a positive trend as those indicating a negative one. In most other cases, at least twice as many respondents indicated positive trends.

⁹ The median response statistic dilutes the information we obtained from many of the respondents insofar as it fails to represent the values at either end of the scale. In principle we could take better advantage of this information in a factor or principal component analysis that collapses the 13 variables into a new indexed variable. However, these techniques can be applied rigorously only to variables that are measured on an interval or ratio scale. Although both techniques are commonly used for a host of ordinal and in some cases even nominally measured variables, either would require us to assume that the numerical representations of the Likert scale accurately capture “true” (i.e., close to interval-scale) between-category distances and thus do not distort the underlying correlation matrices. This is a highly questionable assumption in light of the difficulties with respondents’ experiences that we already have noted.

Table 8. Behavior of DNR			
In comparison to the mid-1990s, the behavior of the Department of Natural Resources with respect to contaminated properties TODAY is:			
Behavior	<i>Percentage of Respondents</i>		
	Less	No Change	More
thorough	11%	45%	44%
flexible	23%	28%	48%
likely to detect violations	11%	50%	39%
likely to apply sanctions	20%	44%	36%
fair	13%	52%	36%
knowledgeable	8%	43%	49%
insistent on strict adherence to cleanup standards	18%	44%	38%
reluctant to use threats	20%	51%	30%
willing to negotiate	19%	37%	45%
trusting of private parties	16%	52%	31%
easy to work with	23%	41%	36%
integrated across programs	14%	57%	29%
innovative	17%	43%	40%

This largely positive view of DNR appears remarkably consistent across different sample subsets constructed on categories related to familiarity with contamination and work experience. Thus, for example, a significantly higher proportion of the subset of respondents with high familiarity with contamination have a median response across the 13 behaviors that is positive (4 or 5) rather than negative (1 or 2). Likewise, a higher proportion of the subset of respondents with low familiarity with contamination have a median response across the 13 behaviors that is positive rather than negative, although the differences narrow somewhat.

The positive pattern also generally holds true for subsamples constructed on our work setting variable (public organization, private organization, nonprofit). However, these subsamples reveal somewhat more heterogeneity in how respondents, particularly those in private organizations, assess DNR's approach to brownfields. Forty-five respondents from

private organizations indicated some change since the mid-1990s in the degree to which DNR appeared to trust private parties,¹⁰ for example, but only a slightly larger number of these respondents noted a positive change as noted a negative change (53 percent versus 47 percent). For those indicating a change in the ease of working with DNR, the relevant percentages are also 54 percent positive and 46 percent negative. For three other aspects of DNR's institutional culture—flexibility, willingness to negotiate, and integration across DNR programs—the difference also narrowed notably between those who indicated a positive change and those who indicated a negative one.

It's important to caveat all these findings with the observation that DNR's approach to brownfields was as much about muddling through a complex policy phenomenon as it was a sharply delineated set of initiatives. Because policy development in brownfields since the mid-1990s has been uneven, it is important to note that our respondents' perspectives may not necessarily have kept pace with the continuing evolution of policy and practice. In the words of one respondent:

[T]he questions concerning the WDNR are really mobile questions in time. The span of 10 + years has seen a number of swings in the agency reactions to development of contaminated properties. We have seen a swing from strict adherence to very high cleanup standards, to the application of more achievable and realistic public health protection standards, to the development of standards plus risk assessment options, to closure without future liability, to closure with insurance against future liability, to slam dunk closure for petroleum contamination without groundwater contamination assuming natural attenuation and even extending this closure to ground water contaminated sites where public water supply exists. The closure process has moved from nearly impossible, to easier, to very easy, but as of now, seems to be swinging back to more difficult. It is almost like trying to predict the weather. Every time you think you have it figured out it rains on your parade.

6. Summary

The redevelopment of brownfields properties appeals to a wide spectrum of individuals, perhaps chiefly because such redevelopment is viewed as a win-win situation. It offers an opportunity to revitalize underutilized properties—and in some cases wider distressed areas of communities—as well as a means to enhance the protection of human health and the natural

¹⁰ Forty-three respondents from private organizations indicated “no change,” but these are not reflected in the percentages noted in the text. Similarly, respondents marking “no change” for the other behaviors discussed in the remainder of the paragraph are not included in the calculations.

environment. Public and private parties may view both types of gains as important, as evidenced by large proportions of both types of respondents in our sample who identified economic and environmental reasons as important for redeveloping contaminated properties. This agreement attenuates somewhat, however, when we control for the familiarity each respondent has with contamination. Although economic and environmental objectives continue to garner high levels of support, those with greater familiarity with contamination downplay environmental issues somewhat, while those with less familiarity downplay some of the economic reasons. This is generally consistent with the prevailing emphasis in brownfields circles nationally—in state brownfields programs, legislatures, academia, conferences, and the trade press—on the economic aspects of brownfields redevelopment. Moreover, to the degree that those with more familiarity with contamination have gained experience in settings where potential exposure to contamination may be relatively low (in urban areas where groundwater is not used for drinking, for example) and where land values are relatively high or revitalization needs particularly acute, the relative de-emphasis of environmental issues is understandable.

We also see in the survey results the factor that much of the literature and nearly all of the individuals we interviewed in the first two parts of our larger project on brownfields identified as the biggest constraint to redeveloping more contaminated properties: the high cost of cleanup relative to the public and private financial support available. Nearly all of our respondents indicated that more contaminated sites would be redeveloped if more money were available for site cleanups. In a separate question, most also identified the high cost of cleanup as an important constraint to redeveloping contaminated properties. Moreover, the only other constraint identified as important by significantly more than half of respondents—the length of time necessary for cleanups to garner approval—arguably is also a cost constraint, particularly for the private developers in our sample.

When we turn to the role of the state DNR and the degree to which possible factors—related to funding, expertise, political pressure, public support, authority, and interagency coordination—constrain the agency’s ability to oversee cleanup of contaminated sites, no single factor predominates. A clear majority of respondents indicated that each factor imposed at least a moderate constraint on DNR’s oversight ability. In another question related to the broader ability to maintain the integrity of a remedy that relies on institutional controls—expressed as the likelihood that an owner would be aware of a land use restriction on his or her property under different approaches to recording the restrictions—roughly 50 percent of respondents indicated that an owner would more likely be aware of restrictions recorded on deeds than on an electronic registry (less than 20 percent indicated a higher awareness with the electronic registry).

Finally, our series of questions related to perceptions of changes in DNR's approaches or attitudes to contaminated property indicated generally positive experiences. None of the 13 approaches/attitudes that we presented were perceived by a majority of respondents as clearly positive trends, but at least 40 percent of respondents indicated clearly positive trends for five of the 13 approaches/attitudes. And, for all 13, notably more respondents indicated positive rather than negative trends.

Overall, the survey results are consistent with the other parts of our study that are based on extensive interviews. Economic drivers are central to brownfields redevelopment for most parties, while opinions on many regulatory issues appear more diffuse and less homogenous. Most critically, regulators' flexibility, cooperation, and willingness to negotiate appear to be important elements of the evolution of brownfields policy innovations over the last 10 years.

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Land Redevelopment Survey

Purpose

This study draws on the expertise and opinions of public and private parties on the redevelopment of environmentally contaminated properties in the state of Wisconsin. The goal of the survey is to collect diverse views about the redevelopment of contaminated properties, including the possible objectives of such redevelopment, potential constraints to it, and changes in regulatory programs that affect it. This information will be used to develop a better understanding of the past successes and remaining challenges in redeveloping contaminated properties.

Benefits to you

The results of the survey will be shared with you, other survey participants and interested federal, state, local, and private for-profit and non-profit entities. The survey results will provide a more detailed picture of redevelopment of contaminated property: what forces and factors drive the process, create barriers to it, or influence it. The results could also shape future policies related to the redevelopment of contaminated properties.

Instructions

Please answer all 14 questions. We have designed the questionnaire so that it will take a minimal amount of your time. Even if you think you do not know much about environmentally contaminated property, we are interested in your perceptions. We encourage you to complete this survey on the Internet at <http://www.rff.org/landsurvey>, but you are welcome to print this file, fill in the questions, and mail it back to us by following the instructions on the last page (we cover postage).

Confidentiality

Your answers to this survey are confidential. No information you give us will be released in any way that can identify you. Survey responses will not be attributed to any individual. Data from the survey will be aggregated and used in statistical analyses to compare experiences and perceptions of the redevelopment of contaminated properties among different regions in Wisconsin.

Who is Responsible for this Survey?

This study is being conducted by Resources for the Future (RFF, www.rff.org) and the Center for Public Environmental Oversight (CPEO, www.cpeo.org), both located in Washington, DC. RFF is a 50-year-old non-profit research institute that conducts independent social science research on environmental quality and natural resources. CPEO is a 10-year-old non-profit organization that promotes and facilitates public participation in the oversight of environmental activities at Superfund sites, brownfields, and federal facilities. Funding for the study comes from the Andrew W. Mellon Foundation in New York. If you have questions about this survey, please contact Kris Wernstedt at (202) 328-5076 or wernstedt@rff.org.

RESULTS (% of n=263 responses, may not add to 100 due to rounding)

A. Background

1. Check the region of the state in which you most often work.

- ☐ **North:** Ashland, Barron, Bayfield, Burnett, Douglas, Florence, Forest, Iron, Langlade, Lincoln, Oneida, Polk, Price, Rusk, Sawyer, Taylor, Vilas, or Washburn county **9**
- ☐ **Northeast:** Brown, Calumet, Door, Fond Du Lac, Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Waupaca, Waushara, or Winnebago county **23**
- ☐ **West Central:** Adams, Buffalo, Chippewa, Clark, Crawford, Dunn, Eau Claire, Jackson, Juneau, La Crosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon, Wood county **18**
- ☐ **South Central:** Columbia, Dane, Dodge, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, or Sauk county **17**
- ☐ **Southeast:** Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, or Waukesha county **33**

2. What kind of organization do you work for?

- ☐ state government **3**
- ☐ county government **19**
- ☐ city, town, village or other local government **34**
- ☐ private for-profit or non-profit organization [skip to question 4] **27**
- ☐ tribal or inter-tribal organization [skip to question 5] **2**
- ☐ other (please specify) _____ [skip to question 5] **16**

3. What type of office or agency do you work for? **n=147**

- ☐ administrative/finance/assessment [skip to question 5] **12**
- ☐ economic/community development [skip to question 5] **24**
- ☐ planning/zoning [skip to question 5] **33**
- ☐ public works/water [skip to question 5] **0**
- ☐ register of deeds/land recordation [skip to question 5] **0**
- ☐ environmental or natural resource [skip to question 5] **2**
- ☐ elected official [skip to question 5] **14**
- ☐ other (please specify) _____ [skip to question 5] **14**

Answer Question 4 ONLY if you work in the private for-profit or non-profit sector:

4. What private sector activity do you do? **n=71**

- ☐ realtor/broker **11**
- ☐ developer **17**
- ☐ appraiser **1**
- ☐ attorney **3**
- ☐ environmental/engineering consultant **24**
- ☐ lender **1**
- ☐ environmental non-profit group **4**
- ☐ housing or economic development non-profit group **20**
- ☐ other (please specify) _____ **18**

5. How many years of professional experience do you have working in Wisconsin (including your current position and previous positions)?

18 years

B. Redevelopment of Contaminated Property

We are interested in the redevelopment of property in your local area that has or is perceived to have environmental contamination. By environmental contamination, we mean any hazardous substance, pollutant, or other contaminant in the soil, groundwater, or structures at a property, regardless of its severity. Even if you think you do not know much about environmentally contaminated property, we are interested in your views. Use a local area that you are familiar with in answering each of the following questions. It could be the local area you live in, one in which you work, or one with which you are otherwise familiar.

6. Check one of the following categories to characterize the local area that you will use for the remaining questions.

- ☐ town, village, or municipality with population of less than 10,000 **22**
- ☐ town, village, or municipality with population of 10,000 or greater **32**
- ☐ county with population of less than 50,000 **15**
- ☐ county with population of 50,000 or greater **19**
- ☐ multi-county region in primarily rural setting **13**
- ☐ multi-county region in urban or suburban setting **0**

7. Please characterize your general familiarity with contaminated property in your local area (circle your answer).

Complete unfamiliarity		Moderate familiarity		Very strong familiarity
2	15	49	26	9

8. You may have heard various reasons why some people think it is important for communities across the state to redevelop contaminated properties. Please indicate your view of the importance of each of the following reasons why contaminated properties should be redeveloped in your local area, using a scale of 1 (not important) to 5 (very important).

	not important	slightly important	moderately important	important	very important
increase tax revenue	3	7	12	46	32
more efficient use of infrastructure	2	4	18	45	31
remove eyesores	1	4	15	44	36
create jobs	4	8	18	42	28
reduce public health risk	2	6	18	34	41
reduce environmental risk	1	6	14	38	42
reduce sprawl	10	13	28	25	24
diversify business mix	6	23	32	32	7
promote greenspace	4	19	34	30	13
part of area-wide redevelopment agenda	5	14	26	37	17

RESULTS (% of n=263 responses, may not add to 100 due to rounding)

9. Private and public sector experiences with redeveloping contaminated properties have varied across the state. Please indicate the extent to which you disagree or agree with each of the following statements for your local area. Rate each on the scale of -2 (completely disagree) to +2 (completely agree).

	<i>Circle your level of agreement</i>				
	Completely disagree		Neither agree nor disagree		Completely agree
Most developers are not willing under any condition to redevelop a property that they believe is contaminated.	13	40	16	24	8
Most developers who redevelop contaminated properties receive a <u>lower</u> rate of return on those redevelopments than they do on uncontaminated properties.	10	33	36	18	3
Most developers who redevelop contaminated properties receive a <u>higher</u> rate of return on those redevelopments than they do on uncontaminated properties.	5	22	53	18	2
Site owners are required to disclose the results of site investigations to DNR if contamination is discovered. Such requirements impede the market for redeveloping contaminated properties.	11	22	19	36	13
The redevelopment of contaminated properties usually requires financial support from local or state public agencies.	2	4	9	51	33
Developers who redevelop contaminated property are more willing than the average developer to take large risks.	2	10	25	47	16
Most redevelopments of contaminated properties involve a negotiation between the developer and the state government about the amount of cleanup required.	1	5	16	49	29
Gaining state regulatory approval of cleanups of contaminated properties is a bigger problem than gaining local approval of design and site plans.	5	11	23	35	27
A developer who is purchasing a site that is contaminated generally knows the estimated cleanup cost he will incur BEFORE he takes ownership of the site.	10	29	16	31	14
More contaminated sites would be redeveloped if more public money were available for environmental site assessments.	3	4	14	46	33
More contaminated sites would be redeveloped if more public money were available for site cleanups.	1	2	10	40	47
Public money for environmental site assessments is more critical than public money for cleanups.	8	29	39	18	6
There is little contaminated property in my local area.	23	38	18	17	5

RESULTS (% of n=263 responses, may not add to 100 due to rounding)

10. Across the state, various factors may make it difficult for developers to redevelop contaminated properties. Please rate the level of constraint in your local area of each of the following items. Use a scale of 1 (not a constraint) to 5 (very important constraint).

	<i>Circle degree of constraint</i>				
	not a constraint		moderate constraint		very important constraint
complexity of cleanup standards	1	6	42	32	18
inconsistencies in cleanup standards	4	19	37	26	14
length of time needed to get cleanups approved	1	4	29	38	28
high cost of cleanup	0	2	14	34	50
lack of cooperation from local government	19	36	30	7	8
community opposition	37	32	19	8	4
possibility that additional cleanup will be required in the distant future	3	13	29	32	23
unfavorable lending terms	7	19	39	22	14
possible U.S. EPA involvement	6	14	31	29	21

C. The Role of DNR

The Wisconsin Department of Natural Resources (DNR) is the principal state agency with the responsibility for overseeing cleanup at sites that are environmentally contaminated. Our final four questions relate to the DNR's role.

11. Since the mid-1990s, the approach that the DNR has taken on contaminated properties has changed as legislation and regulations have evolved. Please indicate, to the best of your knowledge, the change in the behavior of the DNR with respect to contaminated properties in your local area over this time period. *Circle 1 for agreement with the label on the left, 5 for agreement with the label on the right, or 2, 3 or 4 for intermediate positions.*

In comparison to the mid-1990s, the behavior of the Department of Natural Resources with respect to contaminated properties TODAY is:

	no change					
less thorough	2	10	45	36	8	more thorough
less flexible	7	16	28	40	8	more flexible
less likely to detect violations	2	10	50	34	5	more likely to detect violations
less likely to apply sanctions	3	18	44	28	8	more likely to apply sanctions
less fair	6	6	52	30	6	more fair
less knowledgeable	3	5	43	38	12	more knowledgeable
less insistent on strict adherence to cleanup standards	1	17	44	26	12	more insistent on strict adherence to cleanup standards
less reluctant to use threats	7	13	51	25	5	more reluctant to use threats
less willing to negotiate	7	11	37	37	7	more willing to negotiate

RESULTS (% of n=263 responses, may not add to 100 due to rounding)

In comparison to the mid-1990s, the behavior of the Department of Natural Resources with respect to contaminated properties TODAY is:

	no change					
less trusting of private parties	8	8	52	29	2	more trusting of private parties
less easy to work with	11	12	41	30	5	more easy to work with
less integrated across programs	6	9	57	25	4	more integrated across programs
less innovative	6	11	43	33	7	more innovative

12. The DNR may face a number of constraints to overseeing cleanups at sites in your local area that are contaminated. Please indicate the importance of each of the following possible constraints to the ability of the DNR to oversee cleanups in an effective and timely fashion.

	not a constraint		moderate constraint		very important constraint
inadequate funding for staff	6	5	30	31	27
inadequate funding for non-personnel needs	8	11	34	31	16
insufficient expertise among staff	10	21	36	21	13
pressure from political leaders	6	20	35	23	16
lack of authority	21	23	30	21	6
lack of support from the general public	15	27	30	18	10
lack of interagency coordination	5	16	37	25	16

At some properties that have remaining soil or groundwater contamination after a cleanup approved by the DNR is completed, the DNR may require the property deed to have language that restricts what activities or land uses can take place on the property. Assume that a business property does have soil or groundwater contamination remaining after a DNR-approved cleanup and that language to restrict land use activities is placed on the property deed.

13. How likely is it that the typical business property owner in your local area would be aware of the land use restrictions 5 years after the language was placed on his/her property deed?

certain to be AWARE of restrictions			equally likely to be aware as unaware			certain to be UNAWARE of restrictions		
9	13	16	5	22	8	10	6	6
								3

14. Suppose that the DNR did not require that land use restrictions be placed on the property deed but instead be listed on an electronic registry constructed by the DNR that is available on the Internet. How likely is it that the typical business property owner in your local area would be aware of the land use restrictions 5 years after the language was placed on the electronic registry but not on the property deed?

certain to be AWARE of restrictions			equally likely to be aware as unaware			certain to be UNAWARE of restrictions		
2	4	6	10	24	6	10	16	12
								11

RESULTS (% of n=263 responses, may not add to 100 due to rounding)

Would you like us to send you survey results? **64 yes** **36 no**

If you answered yes, please fill in your contact information below. Otherwise, providing your name and contact information is completely optional. None of your responses will be attributed to you or used in a way that can identify you.

Name: _____ Email address: _____
Mailing address: _____

If you like, please share with us any comments you have regarding the issues addressed in this survey or the survey itself in the space below:

Thank you very much for your time and cooperation. Questions or additional comments can be directed to Kris Wernstedt at (202) 328-5076 or wernstedt@rff.org. RFF's mailing address is: Resources for the Future, 1616 P St., NW, Washington, DC 20036, and we're on the web at <http://www.rff.org>.

Instructions for mailing this survey: After completing this document, please make sure that the following page (with the Business Reply form) is facing backwards, then fold the pages along the dotted line so that our address is facing out. Tape or staple at the bottom to secure and simply drop the packet in the mail – postage will be paid by us. Thank you!