



Status Report: Initiatives to Develop Web Sites Including Information about Brownfields Properties



**Status Report:
Initiatives to Develop Web Sites
Including Information about
Brownfields Properties**

U.S. Environmental Protection Agency
Office of Solid Waste and Emergency Response
Technology Innovation Office
Washington, DC 20460

STATUS REPORT:
INITIATIVES TO DEVELOP WEB SITES INCLUDING INFORMATION
ABOUT BROWNFIELDS PROPERTIES

NOTICE

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ACKNOWLEDGMENTS

The Technology Innovation Office would like to acknowledge and thank the individuals who provided background material on current and planned web sites that include information about brownfields properties.

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KEY FINDINGS

- There currently are numerous efforts at national, state, and local levels to develop web sites and data bases including information about brownfields properties.
- Developing web sites and databases is costly, but there are opportunities to leverage the experiences of others and combine efforts to save resources and time.
- A minimum number of data elements must be present to describe brownfields properties in order for web sites to be a useful tool.
- Many issues and concerns may inhibit the effectiveness of web sites as sources of public information about brownfields properties.

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1.0 BACKGROUND

In March 2000, the U.S. Environmental Protection Agency (EPA) Office of Solid Waste and Emergency Response (OSWER) undertook a study to assess the feasibility of establishing a national brownfields site exchange web site (exchange). Such a web site might enhance the exchange of information nationally between owners of brownfields properties and potential purchasers thereof. Owners or purchasers of brownfields properties could include local, state, and federal agencies; tribal governments; local businesses; national corporations; developers; realtors; and investors. EPA believed the exchange could help companies that offer site characterization and remediation services, innovative approaches and technologies for cleaning up sites, and other services supporting the cleanup of brownfields properties. The study revealed a number of hurdles that make it difficult for EPA to proceed with the establishment of the exchange, and EPA has determined that other organizations may be better suited to proceed with that effort.

EPA believes that the result of the study is the most comprehensive analysis that has been conducted of web sites and databases (both referred to as web sites in this report) that include information about current and planned brownfields properties. EPA is providing this report about the study and its findings to assist other organizations developing and operating web sites that include information about such properties. Appendix A to this report describes the approach to the study.

A number of cities, states, associations, non-profit organizations, and others have developed or are planning web sites related to brownfields properties. Because many of the web sites appear to be similar, there may be opportunities to share information and combine efforts. The various web sites exhibit similarities in the configuration and information reported for given properties. Because the development and operation of comprehensive web sites can require extensive resources, individuals who are designing and operating them are encouraged to review other web sites and communicate with others who have undertaken similar initiatives to determine opportunities to leverage individual efforts and thus save time and money.

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In addition to including basic information about the properties listed, such as location, size, zoning, and ownership, many web sites include other information to assist potential buyers in making initial evaluations of properties. Such information includes: (1) tax and other incentives being offered, (2) the type(s) of contamination, (3) the extent to which contamination at the property has been characterized, and (4) links to other web sites that provide more detailed information about the properties listed.

Drawing on the findings of the study, EPA prepared an optional web site design that presents one possible approach to designing a web site and a sample functional requirements document. This report discusses both tools in more detail.

Once a web site has been constructed, the operator of the system may have neither the capability nor the resources to collect and routinely update data on large numbers of brownfields properties, particularly in the case of national efforts that could involve thousands of properties. This report identifies potential relationships with state and federal agencies, associations, and private companies that may be willing to promote the collection of information and support the operation of web sites developed by other entities.

2.0 FINDINGS OF THE STUDY

The key findings of the research of other web sites and discussions with potential users of the exchange and staff of other federal agencies are discussed below.

- Most individuals with experience in developing web sites are willing to share lessons learned, and those considering the development of web sites would like to identify opportunities to work with others to save time and money.
- Most individuals and organizations that participated in the discussions supported the concept of a national web site and expressed the belief that local, state, and federal brownfields programs could benefit from such a web site; however, at the time the study was conducted, they were not able to make firm commitments to provide either information for the web site or operational resources.
- Currently, national web sites contain minimal information about individual brownfields properties; the operators are exploring methods of obtaining additional information about such properties and keeping that information current.

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- Some states currently operate web sites dedicated to listing brownfields properties. Other states have web sites of environmentally impaired sites, in which brownfields properties are included as a subset. Appendix B to this report is a list of states that were contacted to determine whether they have collected or plan to collect information about brownfield properties and make that information available to the public.
- The web site designs that several states have developed could serve as a basis for other entities developing similar web sites. Using those web sites could keep to a minimum the resources necessary to develop new web sites. It appears that the Commonwealth of Pennsylvania has the most comprehensive web site of brownfields properties in the nation. Second is the state of New Jersey, which has developed a comprehensive database to be used as the basis for a web site. Massachusetts also has a web site of brownfields information; however it includes only a limited number of sites. Appendix C to this report shows the items of information the three states are interested in collecting and the number of properties in their systems. Appendix C also includes a comparison of the items of information for each of the three states, to the items of information included in the optional web site design prepared by EPA (see Section 3.0).
- There is a national database for properties potentially available for redevelopment under the DoD Base Realignment and Closure (BRAC) program; however, the information in it may not be complete because local redevelopment authorities (LRA) have primary responsibility for managing the transfer of DoD properties at their level, and thus maintain information about their assigned properties. EPA held discussions with several LRAs that were developing web sites. Representatives of those LRAs indicated a willingness to continue discussions about the development of a national web site.
- Emerging from the study were a number potential challenges to the development and operation of web sites providing information about brownfields. The challenges arise whether the effort is a local, regional, state, or national one. They are:
 - There is no regulatory mandate or other significant motivating factor that encourages the development of comprehensive lists of brownfields properties. The most significant motivation appears to be at the city and state level where inventories of brownfields properties are helpful to establish a clearer picture of where such properties are located, to determine the status of cleanup efforts, and to track grants and other funds awarded to support redevelopment.
 - Generally, government agencies do not appear to have the level of resources necessary to give priority to the development and operation of web sites that include information about brownfields properties. Similarly, it appears that private organizations and associations may not have the resources necessary for a major effort.
 - Because they consider the “brownfields” designation negative, many property owners are reluctant to include their properties in lists of brownfields properties that will be available to the general public and to regulatory agencies.

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- There may be legal ramifications associated with advertising or otherwise implying that a property is for sale merely because it appears on a list of brownfields properties. An agreement may be required between property owners and operators of web sites to verify the owners' desire to list the property and offer it for sale.
- Developers, realtors, and others who receive a fee for their role in property transactions could lose those fees if bypassed via public web sites; they may resist the use of such web sites.

3.0 OPTIONAL WEB SITE DESIGN

To assist others in developing their web sites, EPA prepared an optional web site design based upon the review of current web sites and web sites being planned. The structure and data elements of the optional design are built upon components found frequently in other web sites and appear to be widely accepted. The optional design includes approximately 60 data elements, selected on the basis of the review of the other web sites, as well as discussions with potential users. A key factor was an effort to strike a balance between the traditional items that purchasers of commercial properties request to support evaluation of properties and the information that describes the extent to which a purchaser must resolve potential cleanup and liability issues associated with brownfields properties. Although many potential buyers of properties suggested other items in addition to those included in the optional design, it encompasses the majority of the information items found in current web sites or those are being considered for web sites under design.

The optional design is available at <http://clu-in.org/bfwebsite>. Appendix D reports information about the optional design. The optional design includes a search function using combinations of parameters and links to other web sites to provide more detailed information about the properties listed and the capability to provide printed reports.

The optional design suggests a **minimum set of data elements** that should be present if the property is to be listed on the web site. The 13 elements are:

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- | | |
|-------------------------------|--------------------------------|
| • Street name | • Proposed zoning |
| • City | • Status of site investigation |
| • County | • Status of remediation |
| • State | • Redevelopment incentives |
| • Zip code | • Contact name |
| • Size | • Contact phone number |
| • Public or private ownership | |

The items were selected because: (1) they are likely to be the minimum elements that a prospective purchaser of the property requires to determine whether the property is of interest and (2) it is reasonable to assume that the items will be available for a large number of brownfields properties. Providing information about the city, county, state, or Zip code allows users of the system to search the properties at a variety of levels. Operators of individual web sites can modify the minimum data elements to meet the needs of the potential users of their system.

To maximize the use of information available in local, state, or other web sites across the United States, it may be possible to design a national web site to serve as a central link for all. One option could be to use the minimum required data elements as a basis for the links. If the operators of the web sites agree to use the minimum data points for their systems, a national web site could function as a search engine for those systems.

4.0 SAMPLE FUNCTIONAL REQUIREMENTS DOCUMENT

The sample functional requirements document included in Appendix E to this report presents a general framework for the development of more detailed procedures that may be necessary to operate a web site with information about brownfields properties. The sample functional requirements document is based upon the optional web site design prepared by EPA. The functional requirements document describes the relationship between the screens of the web site, procedures for entering data to the web site, definitions of the suggested minimum data elements that must be present for each property, procedures for searching the web site, and a sample search report. The sample functional requirements document also is available at <http://clu-in.org/bfwebsite>.

5.0 SUGGESTIONS FOR PROCEEDING

Drawing on the findings of its study, EPA offers the following suggestions to assist others who are planning, designing, and operating web sites that include information about brownfields properties:

- *Consider the requirements of all potential users of a web site:* To help ensure the success of a web site, discussions should be held with target audiences that could benefit from the site. Those audiences might include national corporations that purchase brownfields properties, as well as associations with members who have redeveloped brownfields properties successfully and actively seek new opportunities. The optional web site design prepared by EPA can be used as a basis for further discussions about the items of information that would be most useful to users of a web site.
- *Identify opportunities to build on lessons learned:* The study revealed that many cities, states, private parties, and other entities are embarking on individual efforts to develop and operate web sites. Because many of those systems will be similar to one another, efforts might be combined to save time and money. The information obtained through the study could be used to guide that process. Any resources saved when developing web sites could be used instead to gather, enter, and maintain complete and current property information in the web site.
- *Identify opportunities to share information:* A variety of entities have expended vast resources to plan and design web sites. Increasing communication among potential users and operators of web sites to identify common needs and approaches could save significant funds.
- *Define actions and resources for moving forward:* Any effort to list information about the potentially thousands of brownfield properties across the nation will require a well-defined plan and extensive resources. The steps to be taken in a national effort must be defined and shared with all stakeholders in the process. Once the steps have been defined, an estimate of the resources necessary can be made. Then parties could begin to allocate the resources necessary to accelerate the concept.
- *Encourage the sharing of views and the development of strategic alliances:* During the study, EPA held discussions with a cross-section of potential users of web sites. However, because the potential number of users is large, additional discussions are warranted to ensure all valid views are represented. Many individuals, government agencies, associations, and other entities have worked on brownfields web sites. However, much of the work to date has been performed by individuals working on their own. It would be beneficial to identify opportunities to bring those entities together to form strategic alliances and partnerships as a means of maximizing resources and “brainpower.”
- *Identify past and current efforts:* It would be beneficial to identify efforts by local, state, and federal agencies and other entities that can serve as a basis for others to consider.

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The efforts should include both web site designs and procedures for the collection and maintenance of information about properties. Information about efforts that have not been successful also should be shared.

Appendix A

Approach to the Study

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In conducting its study, EPA recognized that other web sites, current or planned, contain or will include information about brownfields properties and other distressed properties that have potential reuse value. The study included meetings with potential buyers and sellers of brownfields properties, as well as other national and local brownfields stakeholders, to: (1) learn more about those web sites; (2) solicit ideas about and suggestions for ways in which the exchange could best serve their needs; and (3) identify potential opportunities to coordinate the exchange with other efforts to list brownfields properties.

National web sites that were reviewed and their affiliations or sponsoring entities are:

- <www.Brownfields.com> (Brownfields.com);
- <www.BrownfieldNews.com> (National Brownfield Association);
- <www.USChamber.com/Brownfields> (U.S. Chamber of Commerce);
- <www.GreenOnline.com> (Polymer Alliance Zone of West Virginia (PAZ); the web site was formerly affiliated with SAIC Inc.);
- <www.Siteseeker.org> (Council for Urban Economic Development, National Association of Installation Developers, and others).

In addition to discussions with those organizations, EPA participated in discussions with other organizations that support the national Brownfields Program, as well as state agencies that are developing web sites that include information about brownfields properties. The purpose of the discussions was to obtain insight into the experiences of those organizations in establishing similar web sites and to determine the organizations' level of interest in supporting the development and operation of a national web site. The other organizations with which discussions were held include the Environmental Redevelopment Association and the National Association of State Development Agencies; the states with which discussion were held include Pennsylvania and New Jersey. EPA also chaired a special session at the national Brownfields 2000 conference in Atlantic City, New Jersey in October 2000 to discuss local, state, and national efforts to collect and disseminate information about brownfields properties. EPA used that opportunity to continue dialogue about the potential exchange with many of the organizations listed above, several state agencies, as well as others that participated in the session.

EPA also conducted discussions with federal "landholder" agencies to determine: (1) the status of efforts of those agencies to develop web sites that provide information about properties that are available for transfer or sale, (2) their experiences in developing web sites, and (3) potential opportunities to link their information to the exchange. EPA held discussions with staff of the U.S. Department of Defense (DoD), the U.S. Department of Energy (DOE), and the General Services Administration (GSA). The most in-

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depth discussions were held with DoD staff involved in the Base Realignment and Closure Program (BRAC) Program because the BRAC Program and the Brownfields Program exhibit a number of similarities in the area of support for economic redevelopment. The discussions with DoE and GSA were limited and therefore are considered preliminary. (It should be noted that properties that are the responsibility of the three agencies identified above are not necessarily considered brownfields properties. In some cases, they are “excess” property, and their redevelopment may not be hampered by real or perceived environmental contamination.)

Appendix B

Report on State Initiatives to Develop Site Exchange Web Sites

NOTE: The information presented in this report was obtained from informal discussions with personnel representing (1) states that approached EPA to discuss their potential involvement in the brownfields site exchange, (2) states that have publicly available web sites that include information about individual brownfields properties and other sites, and (3) a random sampling of other states. The report provides a general “snapshot” of the availability of information about brownfields property nationwide and efforts by states to collect such information and present it to the general public. The report is not intended to be a fully accurate and complete representation of any individual state program, nor of the potential for those states to participate ultimately in a national web site containing brownfields properties. This report was prepared during December 2000; the status of the state initiatives may have changed since that time. EPA wishes to thank the individuals who provided information for this analysis.

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STATE INITIATIVES TO DEVELOP SITE EXCHANGE WEB SITES
A: States Listing Properties for Sale as of December 2000

State Program Title URL (Web Address)	Contact Name Responsible Agency Phone Number	Does State Collect Brownfields Information? If so is it accessible?	What Information Is Included?	How Complete Are the Data?	Comments
Connecticut <i>http://www.state.ct.us/cda/cra</i>	Cynthia Petruzzello Connecticut Development Authority (CDA) (860) 258-7833	Yes, the inventory of brownfields sites is publicly accessible	Primarily demographics and contact information	170 sites	The state has encountered some problems in obtaining property information. State may require a disclaimer to share information with other web sites.
Massachusetts BF-JUMP START <i>http://www.massbrownfields.state. ma.us</i>	Todd Fernandez Governor's Office for Brownfields Revitalization (617) 973-8989	Yes, the Governor's Office has a publicly available web site of brownfields properties. The state took responsibility for developing the framework and updating the database periodically.	Site demographics, government programs, insurance, financing, legal issues	12 sites listed	Participants submit property listings or register as buyers online. The state is not involved directly in maintaining the system, but it is increasing efforts to market the system. The state would consider sharing information with other web sites.
New Jersey New Jersey Brownfield Site Marketing Inventory (MS Access database)* *The inventory is now available online at <i>http://www.state.nj.us/osp/brownfld/ njbsmi.htm</i>	JoAnn Petrizzo Department of Community Affairs (609) 633-7536 Tricia Maggio Office of State Planning (609) 633-7730	Yes, the state is developing a brownfields inventory. It is currently available on an MS Access database for discussion purposes.	Contacts, site description, ownership, transportation systems, utilities, environment, incentives	36 sites listed (public)	The state is considering how the brownfields inventory will interface with other state lists of sites. The state also is investigating how to work with owners of private sites who are reluctant to list their properties on a public web site. The state is very willing to discuss lessons learned.
Pennsylvania Pennsylvania Land Recycling Program <i>http://www.dep.state.pa.us/dep/ deputate/airwaste/wm/landrecy/ Inventory/Sites.htm</i>	Thomas Mellot Department of Environmental Protection (717) 787-4681	Yes, state has developed a comprehensive web site and database structure; it is available to the public.	Location, contacts, description, taxes, utilities, environment, incentives	The database currently lists 252 sites, but only a small number of information items are complete for all sites	The state has used contractor resources to assist in the development of the web site and pays fees to site owners to list properties. The state is moving forward with requests for new and updated information from site owners to enhance the database. Although the web site appears to be the most advanced nationally, the state prefers not to offer it as a model at this time.

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B: Status of Initiatives by Other States as of December 2000

State Program Title URL (Web Address)	Contact Name Responsible Agency Phone Number	Does State Collect Brownfields Information? If so is it accessible?	What Information Is Included?	How Complete Are the Data?	Comments
California Site Mitigation Program <i>http://www.dtsc.ca.gov/site_mit/about.html</i>	Sandra Karinen Dept. of Toxic Substances Control (916) 255-3745	No, the issue is how to define brownfields and limited funding.	N/A	N/A	
Delaware <i>http://sirb.awm.dnrec.state.de.us/</i>	Jim Poling Dept. of Natural Resources and Environmental Control (302) 395-2636	No, the state has a database of contaminated sites and a geographic information system (GIS) for contaminated sites, but not brownfields specifically.	Demographics, owner information, site history, site contaminants, site status, and deed restrictions	N/A	
Florida <i>http://www.dep.state.fl.us/dwm/programs/brownfields</i>	Roger Register Dept. of Environmental Protection (850) 488-0190	No, Mr. Register indicated the state had decided not to prepare a list that provides site information because of the negative perception of brownfields sites. The state has only a list of designated brownfields areas in a pdf file that includes the name of the area and the ID number.	N/A	N/A	The state relies on local governments to provide the listing services and GIS mapping. Miami-Dade County has a list. The state did consider establishing a state-wide database.
Illinois <i>http://www.epa.state.il.us/land/brownfields/index.html</i>	Steve Colantino, Office of Brownfields Assistance (217) 785-9407 Rosalyn Jackson Dept. of Commerce & Community Affairs (DCCA) (217) 524-0169	No, Mr. Colantino indicated the state sees no value in collecting brownfields information on a state-wide basis. The state believes the market has a tendency to make the system work.	N/A	N/A	DCCA is considering establishing a listing service.

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State Program Title URL (Web Address)	Contact Name Responsible Agency Phone Number	Does State Collect Brownfields Information? If so is it accessible?	What Information Is Included?	How Complete Are the Data?	Comments
Iowa	Elly Walkowiak Office of Economic Development (City of Des Moines) (515) 237-1351	The state is considering developing a GIS-based system of brownfields and other sites.	N/A	N/A	The state is interested in lessons learned by others and potentially reducing the costs of developing its own system.
Kentucky <i>http://www.nr.state.ky.us/nrepc/dep/waste/programs/sf/vcpguide.htm</i>	Herb Petitjean Natural Resources and Environmental Protection Cabinet (502) 564-6716	No, those requesting site information are directed to the Economic Development staff for the specific cities or counties of interest.	N/A	N/A	
Nevada <i>http://www.state.nv.us/ndep/bca/brownfld.htm</i>	Connie Lewis Division of Environmental Protection (775) 687-4670, ext. 3024	No, Nevada's Brownfields program is in its initial stages.	N/A	N/A	The state is very interested in a listing service, especially for the Reno area.
North Carolina <i>http://wastenot.enr.state.nc.us/sfhome/brnfld.htm</i>	Bruce Nicholson Dept. of Environment and Natural Resources (919) 733-2801 John Berndt Dept. of Commerce (919) 733-2850 Joe Alexander Research Triangle Institute (919) 541-7025	No, the Brownfields Program is in its initial stages, and funding is limited. The Department of Commerce maintains a brownfields working group that is considering the preparation of an inventory of sites to encourage redevelopment.	N/A	N/A	Research Triangle Institute is considering the establishment of a web site called "Smart Sites," which would list brownfields properties.

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State Program Title <i>URL (Web Address)</i>	Contact Name Responsible Agency Phone Number	Does State Collect Brownfields Information? If so is it accessible?	What Information Is Included?	How Complete Are the Data?	Comments
<p>New York</p> <p>Clean Water/Clean Air Bond Act of 1996 Environmental Restoration Projects, Brownfields Program</p> <p><i>http://www.dec.state.ny.us/website/der/bfields.html</i></p>	<p>Christine Costopoulos (Chief) and Sue Bolesky (Database Admin.) New York State Depart of Environmental Conservation (NYSDEC) (518) 475-7894</p>	<p>The database available to the public is a programmatic reference library, rather than a site-specific catalogue. NYSDEC, however, does have a tracking system for sites for which applications are made for grants or loans to support voluntary cleanup. The data, however, are not made publicly available.</p>	<p>The state tracks site-specific loan applications. The data are not intended for publication or release because of confidentiality.</p>	<p>The database contains information for more than 200 sites. The effort is not, however, an attempt to catalogue all brownfields sites.</p>	<p>The state may have difficulty sharing information with other web sites because of confidentiality issues.</p>
<p>Oregon</p> <p>Potential Brownfields</p> <p><i>http://www.deq.state.or.us/wmc/cleanup/brn0.htm</i></p>	<p>Brooks Koenig Department of Environmental Quality (DEQ) (503) 229-6801</p>	<p>A list of potential brownfields is available on the web site. The list is organized by county.</p>	<p>Location, size, NPL status, contaminants, concentrations, media, and status with DEQ</p>	<p>There are two databases: one has more than 2,000 entries under environmental cleanup, and the other has 6,600 entries under UST cleanup.</p>	<p>The potential list of brownfields includes information about sites at which contamination has been reported and about the progress of cleanup efforts.</p>
<p>Puerto Rico</p> <p>Brownfields Initiative</p> <p><i>http://www.epa.gov/region02/superfund/brownfld/contact.htm</i></p>	<p>Nuria Muniz (Brownfields Project Manager) EPA Region 2 (212) 637-4302</p> <p>Jesus Riekohl (Environmental Science Specialist) Emergency Response and Superfund Area, Commonwealth of Puerto Rico (787) 767-8181, ext. 2232</p>	<p>The commonwealth has no formal system for collecting or organizing data for brownfields sites.</p>	<p>N/A</p>	<p>N/A</p>	

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State Program Title URL (Web Address)	Contact Name Responsible Agency Phone Number	Does State Collect Brownfields Information? If so is it accessible?	What Information Is Included?	How Complete Are the Data?	Comments
Tennessee Voluntary Cleanup, Oversight, and Assistance Program <i>http://www.state.tn.us/environment/dsf/voap.htm</i>	Frank Grubs (Asst. Director) Tennessee Department of Environment and Conservation (TDEC) (615) 532-0900 (888) 891-TDEC	The state provides oversight and assistance to volunteer sites. There is no apparent catalogue of individual sites.	N/A	N/A	
Texas Voluntary Cleanup Program <i>http://www.tnrcc.state.tx.us/permitting/remed/vcp/index.html</i>	Byron Ellington Texas National Resource Conservation Commission (TNRCC) (512) 239-2253	Texas has a voluntary cleanup database that is publicly available (download from web site).	The program lists primarily site demographics, with brief descriptions of cleanup remedies.	The database contains information about 1,166 sites	The coordinator frequently receives requests for a list of brownfields sites and would consider participating in a national web site. For each site listed, there is a plan for addressing contamination and disposing of property; therefore, the information may not be marketable on a national web site.
Virginia Voluntary Remediation Program <i>http://www.deq.state.va.us/vrp</i>	Jerry Grimes Virginia Department of Environmental Quality (DEQ) (804) 698-4207 Kevin Greene Virginia DEQ (804) 698-4236	The program provides certification of satisfactory completion of remediation. There is no apparent catalogue of sites.	N/A	N/A	DEQ is encouraging the listing of properties through the Economic Development Partnership, which is developing a database of buyers and sellers of shell buildings. The database does not have a direct focus on brownfields. Property owners may be hesitant to list their properties under DEQ because of the stigma associated with contamination and enforcement issues.

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Washington Voluntary Cleanup Program <i>http://www.ecy.wa.gov/programs/tcp/vcp/Vcpmain.htm</i>	Joe Hickey (Northwest regional office coordinator) Washington State Department of Ecology (425) 649-7202 Harold Bucholz Department of Ecology (360) 407-7185	The program provides a consulting service (on a fee-for-service basis) for evaluating cleanup for sites at which voluntary cleanups have been undertaken. There is no formal cataloguing; however, the program keeps track informally of cleanups conducted through the voluntary cleanup program.	Several databases containing site cleanup information are being combined, but there is no information specific to brownfields.	The "Hazardous Sites List" identifies sites that have been assessed and ranked but they are not limited to brownfields sites.	There is no specific legislative mandate for brownfields; however, the state works with EPA to promote brownfields loans and grants. The program does not focus on redevelopment; its focus is on cleanup.
Wisconsin Brownfields Location Information System (BLIS)	Jason Scott Department of Commerce (608) 261-7714	Information is available only as a "prototype" of the system.	Location, size, zoning, financial, utilities, and environmental factors	State staff worked with individual site owners and conducted their own research to build a prototype database that contains information about approximately 15 sites.	Because of concerns on the part of private property owners about listing their properties, the initial system may include only a limited number of publicly owned properties.

Notes:

N/A not applicable

Appendix C

Comparison of Items of Information from Current Web Sites (As of December 2000)

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**Comparison of Items of Information
from Current Web Sites
(As of December 2000)**

Optional Web Site Design Prepared by EPA	New Jersey Brownfields Inventory (Total Number of Sites = 36)			Pennsylvania's Land Recycling Program (Total Number of Sites = 252)			Massachusetts Brownfields (Total Number of Sites = 12)			Sites Matched (Total #)
	Match	Sites Matched (#)	Sites Matched (%)	Match	Sites Matched (#)	Sites Matched (%)	Match	Sites Matched (#)	Sites Matched (%)	
1. SITE NAME, OWNER OR AUTHORIZED REPRESENTATIVE										
Site Name *	●	36	100	●	141	56	●	11	92	188
Street Address *	●	36	100	●	224	89	●	11	92	271
Site City *	●	36	100	●	252	100	○	11	92	299
Site State *	●	36	100	●	252	100	○	11	92	299
Site County	●	36	100	●	252	100	X	11	92	299
Site Zip * (If included, may not need Site City or Site State)	●	32	89	○	126	50	○	11	92	169
Owner Name	○	28	78	X	0	0	X	0	0	28
Contact First Name*	●	16	44	○	93	37	○	12	100	121
Contact Last Name*	●	16	44	○	93	37	○	12	100	121
Contact Title	X	0	0	X	0	0	X	0	0	0
Contact Relationship (relationship to owner)	●	36	100	X	0	0	○	12	100	48
Contact Address	●	27	75	X	0	0	●	11	92	38

* Suggested Required Date Element – See Appendix E: *Sample Functional Requirements Document for Web Sites Including Information About Brownfields Properties*: Table 1 - Suggested Data Elements that Should be Listed for Each Site.

Match

- Exact Match: The information item is exactly the same as the information item in the web site design prepared by EPA.
- More General Match: The information item is more general than the information item in the web site design prepared by EPA. For example, the EPA design asks for the first and last name for the site contact. The Massachusetts Brownfields web site asks for a contact name, but does not specify the information that should be provided.
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STATUS REPORT:
INITIATIVES TO DEVELOP WEB SITES INCLUDING INFORMATION
ABOUT BROWNFIELDS PROPERTIES

Optional Web Site Design Prepared by EPA	New Jersey Brownfields Inventory (Total Number of Sites = 36)			Pennsylvania's Land Recycling Program (Total Number of Sites = 252)			Massachusetts Brownfields (Total Number of Sites = 12)			Sites Matched (Total #)
	Match	Sites Matched (#)	Sites Matched (%)	Match	Sites Matched (#)	Sites Matched (%)	Match	Sites Matched (#)	Sites Matched (%)	
Contact City	●	27	75	○	252	100	○	11	92	290
Contact State	●	27	75	○	252	100	○	11	92	290
Contact Zip	●	27	75	○	252	100	○	11	92	290
Contact Phone*	●	27	75	●	252	100	●	12	100	291
Contact Fax	●	27	75	X	0	0	●	10	83	37
Contact E-Mail	X	0	0	X	0	0	●	7	58	7
Site Publicly Owned (Municipality, County, State, Federal, Other) *	○	36	100	X	0	0	X	0	0	36
Site Privately Owned (Individual, Corporation, Partnership, Trust, Other)	○	36	100	X	0	0	X	0	0	36
Site Ownership Description (if Other was selected)	●	36	100	X	0	0	X	0	0	36
Link to Other Web Site Name	X	0	0	X	0	0	X	0	0	0
Link to Other Web Site URL	X	0	0	X	0	0	X	0	0	0
Link to Other Web Site Description	X	0	0	X	0	0	X	0	0	0

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	Match	Sites Matched (#)	Sites Matched (%)	Match	Sites Matched (#)	Sites Matched (%)	Match	Sites Matched (#)	Sites Matched (%)	
2. SITE DESCRIPTION										
Site Description (Text)	●	8	22	●	0	0	X	0	0	8
Site Length	●	5	13	X	0	0	X	0	0	5
Site Width	●	5	13	X	0	0	X	0	0	5
Total Acres *	●	14	39	●	252	100	●	0	0	266
Existing Buildings (#)	●	10	28	●	103	41	●	7	58	120
Building Description	X	0	0	●	83	33	X	0	0	83
Pavement	X	0	0	X	0	0	X	0	0	0
Parking Spaces (#)	X	0	0	X	0	0	X	0	0	0
Current Site Status (Abandoned, Active, Income Production)	●	36	100	X	0	0	●	0	0	36
Current Zoning *	●	36	100	●	131	52	●	12	100	179
TIF District	X	0	0	X	0	0	X	0	0	0
Enterprise Zone	●	30	85	X	0	0	X	0	0	30
Empowerment Zone	●	6	20	X	0	0	X	0	0	6

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Optional Web Site Design Prepared by EPA	New Jersey Brownfields Inventory (Total Number of Sites = 36)			Pennsylvania's Land Recycling Program (Total Number of Sites = 252)			Massachusetts Brownfields (Total Number of Sites = 12)			Sites Matched (Total #)
	Match	Sites Matched (#)	Sites Matched (%)	Match	Sites Matched (#)	Sites Matched (%)	Match	Sites Matched (#)	Sites Matched (%)	
3. TAX AND DEED INFORMATION										
Tax Parcel Number(s)	X	0	0	●	110	44	X	0	0	110
Property Tax (amount)	X	0	0	X	0	0	X	0	0	0
Property Tax Current	X	0	0	X	0	0	X	0	0	0
Date Paid	X	0	0	X	0	0	X	0	0	0
Liens or Judgments	●	0	0	X	0	0	X	0	0	0
Easements	X	0	0	X	0	0	X	0	0	0
Land Use/Dead Restrictions	X	0	0	X	0	0	X	0	0	0
Title Available	X	0	0	X	0	0	X	0	0	0
4. TRANSPORTATION SYSTEMS										
Traffic Study Completed	X	0	0	X	0	0	⊙	0	0	0
Road Access	⊙	25	66	X	0	0	●	0	0	25
Highway Access	●	25	66	X	0	0	⊙	9	75	34
Waterfront Access	X	0	00	X	0	0	X	0	0	0
Rail Access	●	2	6	X	0	0	⊙	4	33	6
Airport Access	X	0	0	X	0	0	⊙	5	41	5
Public Transportation	●	4	12	X	0	0	⊙	3	25	7

* Suggested Required Data Element – See Appendix E: *Sample Functional Requirements Document for Web Sites Including Information About Brownfields Properties*: Table 1 - Suggested Data Elements that Should be Listed for Each Site.

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Optional Web Site Design Prepared by EPA	New Jersey Brownfields Inventory (Total Number of Sites = 36)			Pennsylvania's Land Recycling Program (Total Number of Sites = 252)			Massachusetts Brownfields (Total Number of Sites = 12)			Sites Matched (Total #)
	Match	Sites Matched (#)	Sites Matched (%)	Match	Sites Matched (#)	Sites Matched (%)	Match	Sites Matched (#)	Sites Matched (%)	
5. UTILITIES										
Public Water	●	4	12	●	37	15	●	12	100	28
Public Sewer	●	4	12	●	37	15	●	12	100	53
Electricity	X	0	0	●	37	15	●	12	100	49
Gas	●	1	3	●	37	15	●	12	100	50
6. SITE HISTORY										
First Site Improvement (year)	X	0	0	X	0	0	X	0	0	0
Years Under Operation	X	0	0	X	0	0	X	0	0	0
Ownership Change	X	0	0	X	0	0	X	0	0	0
History of Use	X	0	0	X	0	0	X	0	0	0
7. ENVIRONMENT										
Wetlands	X	0	0	●	37	15	●	12	100	49
Sensitive Ecosystems	X	0	0	●	37	15	●	0	0	37
Endangered Species	X	0	0	●	37	15	●	0	0	37
Historic or Archeological Site	X	0	0	X	0	0	●	0	0	0
Located in Flood Plain	X	0	0	X	0	0	⊙	12	100	12
Phase I Completed *	●	15	40	●	48	19	X	0	0	63
Phase II Completed *	●	15	40	●	48	19	X	0	0	63

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	Match	Sites Matched (#)	Sites Matched (%)	Match	Sites Matched (#)	Sites Matched (%)	Match	Sites Matched (#)	Sites Matched (%)	
Reports Available	●	8	24	●	48	19	●	12	100	68
Voluntary Cleanup Program	X	0	0	X	0	0	●	12	100	12
Remediation in Progress *	●	7	20	X	0	0	X	0	0	7
Regulatory Sign-off Completed	X	0	0	X	0	0	X	0	0	0
Site on Government Environmental List(s)	X	0	0	X	0	0	X	0	0	0
Litigation Involvement	X	0	0	X	0	0	X	0	0	0
8. COMMUNITY INVOLVEMENT										
Level of Involvement	X	0	0	X	0	0	X	0	0	0
Community Concerns (Text)	X	0	0	X	0	0	X	0	0	0
9. INCENTIVES										
Available Govt. Support *	⊙	33	90	●	224	89	X	0	0	257
Incentive Type *	⊙	33	90	●	224	89	X	0	0	257
10. MARKET INFORMATION										
Zoning Change Required	●	36	100	X	0	0	X	0	0	36
Developer Identified	●	36	100	X	0	0	X	0	0	36
Development Plan Complete	●	36	100	X	0	0	X	0	0	36
Market Study Complete	●	0	0	X	0	0	X	0	0	0

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	<i>Match</i>	<i>Sites Matched (#)</i>	<i>Sites Matched (%)</i>	<i>Match</i>	<i>Sites Matched (#)</i>	<i>Sites Matched (%)</i>	<i>Match</i>	<i>Sites Matched (#)</i>	<i>Sites Matched (%)</i>	
<i>Highest/Best End Use Identified</i>	X	0	0	X	0	0	X	0	0	0
<i>Transfer Options</i>	X	0	0	●	186	74	X	0	0	186
<i>Other Pertinent Information (Text)</i>	●	1	3	X	0	0	X	0	0	1

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Items of Information from Current Web Sites That Are Not Included in the Optional Web Site Design Prepared by EPA

Information Item <i>(List of items of information not included in the EPA optional web site design prepared by EPA)</i>	New Jersey Brownfields Inventory # Records Not Null	Pennsylvania's Land Recycling Program # Records Not Null	Total # Records Not Null
Site Location			
Municipality	0*	252	252
Tax and Deed Information			
Sale Price	0*	10	10
Lease Price	0*	0	0
Assessed Value	2	0*	2
Redevelopment Priority (low, medium, high)	5	0*	5
Tax Sale Certificate	0	0*	0
Property Ownership			
Property Owner Info (Address, city, state, zip, phone, email, fax)	29	0*	29
Contact Company	0*	252	252
Contact E-mail	0*	55	55
Grants Approval	2	0*	2
Other Incentives	2	0*	2
Preliminary Assessment	18	0*	18

* Information item does not exist.

Appendix D

Optional Web Site Design Prepared by EPA

NOTE: This appendix is available on line at <http://clu-in.org/bfwebsite>.

This web site is an optional design of a potential web application. It is for display purposes only. It is currently not connected to a live database. The forms on this web site are not functional, and the brownfields property information presented is fictional. All graphics, layouts, and other elements of the web site can be changed to meet the needs of individual users.

Appendix E

Sample Functional Requirements Document For Web Sites Including Information About Brownfields Properties

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1.0 INTRODUCTION

This functional requirements document describes sample procedures that potentially could assist individuals who are planning, designing, and operating web sites that include information about individual brownfields properties. With proper design and operation, web sites have the potential to enhance the exchange of information between sellers and buyers of brownfields properties at the local, state, regional, and national levels. The sample procedures are based on a web site design that the U.S. Environmental Protection Agency (EPA) developed as an optional design for consideration by those individuals who currently are planning, designing or operating web sites that list brownfields properties. The optional design is available at <http://clu-in.org/bfwebsite>. The purpose of this functional requirements document is to provide a general framework for a more detailed set of procedures typically required to operate web sites. The extent to which a more detailed set of procedures will be required for each web site is dependant upon the complexity and operating parameters of that web site.

1.1 BACKGROUND

In conjunction with its study to assess the feasibility of establishing a national brownfields site exchange web site, EPA met with potential buyers and sellers of brownfields properties, as well as other national and local stakeholders, to solicit their ideas and suggestions about how to operate such a web site in order to best serve their needs. In general, many property owners appear to be willing to provide information about their properties, but lack the resources required to collect and assemble comprehensive information and update it routinely. On the other hand, prospective buyers of brownfields properties desire as much information as possible to enhance their ability to screen properties and identify the properties that best meet the buyers' criteria. On the basis of its discussion with brownfields stakeholders, observations of information that is currently collected about brownfields properties, and information that is available to the general public about listings of brownfields properties, EPA is providing a suggested minimum set of information items that should be present for a property in order to include that property in a web site that lists brownfields properties for sale. Web site operators may have to strike a balance in defining minimum information items for their systems.

1.2 OBJECTIVES FOR WEB SITES THAT INCLUDE BROWNFIELDS PROPERTIES

Recognizing the broad range of interests of potential users of web sites including brownfields information, current initiatives underway to assemble information about brownfields properties and the

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potential large volume of information to be managed about properties, the following objectives should be considered in the design of web sites that include information about brownfields properties:

1. The web sites should allow the public easy access to information about the properties listed.
2. The web sites should integrate data that already have been collected about the properties listed.
3. The web sites should provide direct links to other sources of information, including independent databases.
4. The web sites should be designed to minimize the amount of time required for the management and updating of data and operation of the system.

2.0 OVERVIEW OF WEB SITE OPERATING SYSTEMS

The primary function of a web site should be to allow users to easily search a database of brownfields properties. The secondary function of a web site should be to allow users to add or update the records in the database. This is an important function for brownfields properties because; (1) the Brownfields Program continues to grow and new properties are constantly being added to the program, (2) properties need to be removed from the data base because they are sold or for other reasons, (3) new information to characterize contamination is being obtained as properties move through the site assessment process, and (4) property owners continue to receive new incentives to redevelop their properties and information about these incentives should be communicated to potential purchasers. Other functions that potentially could increase the utility of a web site are:

- Automatic e-mail notification of registered users when new properties are added to the database
- Monitoring the use of the system for administrative purposes
- Automatic warning to data providers by e-mail when property listings expire or when status updates are needed
- Automatic expiration of outdated property listings

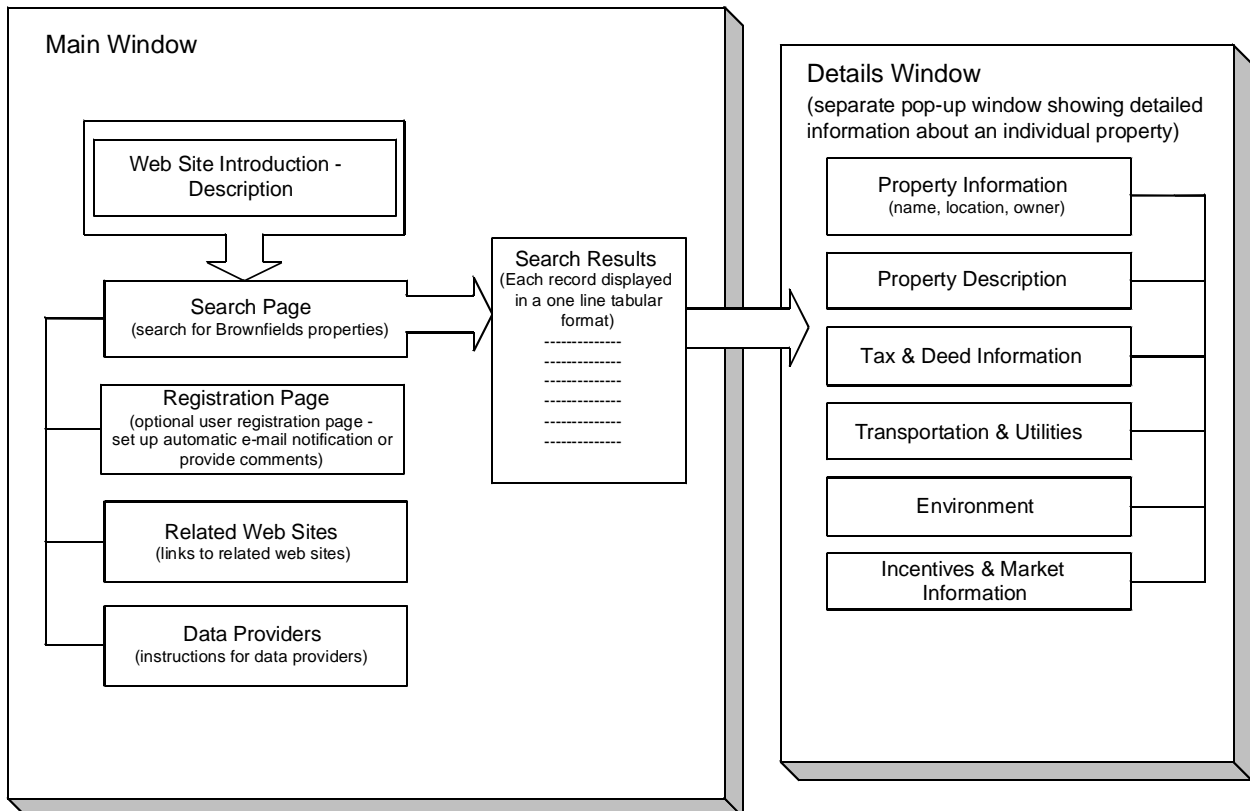
2.1 SYSTEM PLATFORM AND INTERFACE

A web site of brownfields properties should be accessible to anyone who can log onto the World Wide Web using a standard browser that is version 4.0 or higher. The inventory of brownfields properties should be maintained in a relational database, such as Oracle. A combination of standard HTML and a scripting language for web application, such as Cold Fusion or MS Server Pages, should be considered in developing the web page interfaces.

2.2 WEB SITE LAYOUT AND DESIGN

The following diagram shows the relationships between the pages that are included in the optional web site design EPA prepared.

Figure 1. Web Site Diagram



2.3 HOME PAGE

The home page is the first page that users see. The home page captures the attention of users, including potential buyers and sellers of brownfields properties, cleanup contractors, and other service providers. To provide visual continuity between all pages, a banner graphic should appear at the top of each page, and load quickly. The remaining space on the home page screen could be filled with introductory text and hypertext links to other parts of the web site. The home page may include success stories and discussions of recent sales of brownfields properties. The page may show statistics, such as the total number of properties currently in the database and the number of new properties added during the past month.

The home page from EPA's optional design has several hypertext links, with the following purposes:

- The "find brownfields" button links to the main search page, where the user can build a query and find specific brownfields properties.
- The "related links" button takes the user to a list of related web sites. At a minimum, the list could include links to web sites that belong to organizations that will add property listings to the brownfields property web site.
- The "register" button links to a registration page. Registration can be optional. Registered users will have the advantage of receiving e-mail updates when new properties are added to the database or information about properties already listed is modified.
- The "data providers" button links to a web page where, after logging in, the user could add listings or update records they provided earlier.
- The "feedback" button provides an electronic mail connection to the Webmaster and allow users to send questions when they have trouble using the site.
- The "help" link can provide simple instructions for using the web page. This link should be available on all screens and include a list of frequently asked questions and answers. Additionally the link could provide basic definitions of terminology used throughout the site and information on creating an account, as well as basic contact information.

2.4 FIND PROPERTIES FUNCTION

The process of building a search should be simple and straightforward. The users should have the ability to select search criteria from pick lists. Search criteria include property location (city or county, state and Zip code), size of property, ownership, zoning, available development incentives, and status of

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environmental investigations. The search function should default to a logic, such as Boolean, requiring that search results match all the selected criteria (that is, criterion 1 AND criterion 2 AND criterion 3...). The only exception might occur when the user selects more than one incentive as criteria. The search function should find all sites that meet one or more of the incentives selected (that is, incentive 1 OR incentive 2...).

For the EPA optional design, when a user initiates a database search by clicking the Submit button (see Figure 2), the next web page display lists all properties that satisfy the user's criteria (see Figure 3). Properties are listed in a tabular format, with separate columns for such essential data elements as state,

Figure 2. Mockup of a Search Page

Brownfields Property Web Site

Brownfields Property Search

Search for brownfields properties by specifying the criteria below. Click the Submit button to start the search. If you wish to change a criterion you have selected, press the Reset button to start over again.

[Note: Since this web site is only a mock-up of an optional design, the form below is not functional. Clicking the "Submit" button below will bring up a list of mock search results.]

City County

State Zip code

Site Size to acres

Ownership:

Investigation Status *

Remediation Status *

Zoning *

- Industrial
- Commercial
- Residential
- Retail
- Mixed Use
- Other

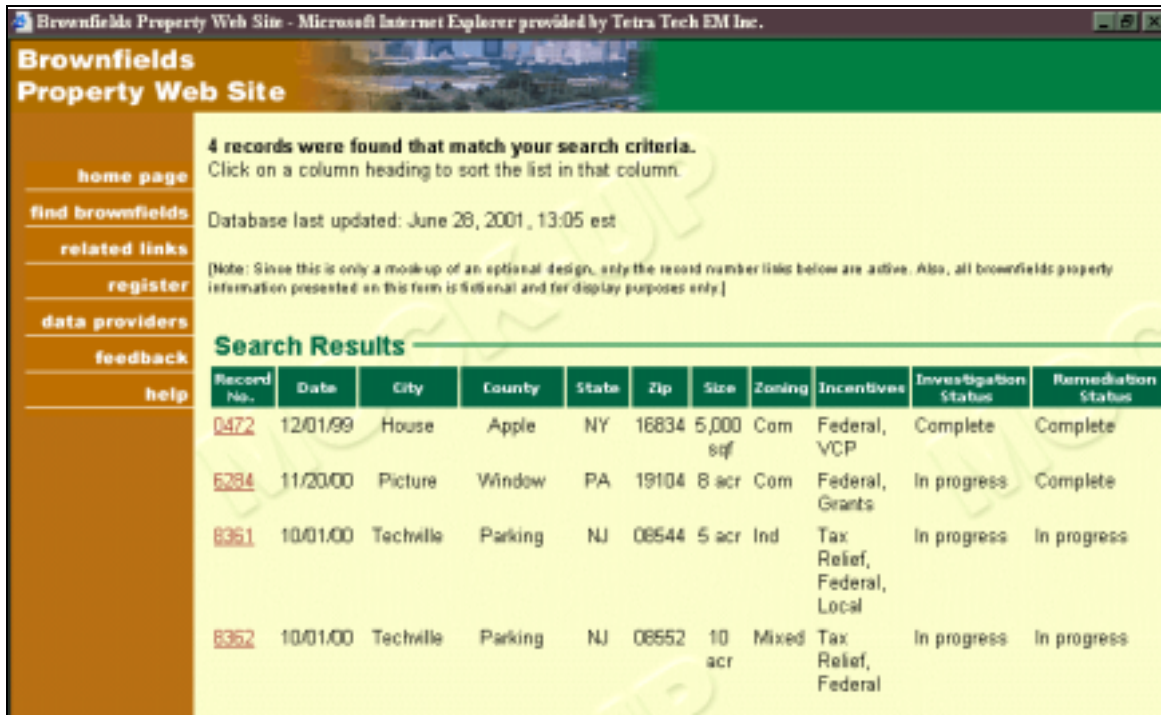
Incentives *

- Local
- State
- Federal
- Loans
- Tax Relief
- Grants
- Bonds
- Voluntary Cleanup Program
- Comfort Letter

* [Help](#)

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Figure 3. Mockup of a Summary Search Results Page



Zip code, county, acreage, environmental status, and development incentives. The default sort order of the tabular list is ascending, by city and then by Zip code for cities that have a number of Zip codes. The user can click on any column heading to sort the list by that column. To reduce loading time for each page, the list is displayed in increments of 30 records per page. Each property is assigned a unique record number to assist users in searching for information. The record numbers are assigned sequentially as new properties are listed.

The user can view detailed information about any of the brownfields properties shown in the summary list. When the user clicks on a property record number in the summary list, an overview of the property appears in a separate pop-up window (see Figure 4). To compare properties side by side, the user can open additional windows to facilitate side-by-side comparison of properties.

The overview of the property may include a direct link to another web site or another database that provides more detailed information about the property. Links to other sources of information can be accomplished through two programming methods. The simplest method is to provide a link to the home page of a data provider. In that case, it may be necessary that the user run another search to find the

Figure 4. Mockup of the Detailed Property Information Page

Location Property Tax Information History Transportation	Close															
Market Information Utilities Environment Remediation Photo																
Detailed Information for Property # 0472																
[Note: This page is a mock-up of an optional design. The information presented here is fictional and for display purposes only.]																
Location																
3501 Tilden Rd House NY, 16834																
Property																
Property Name: Area: 5,000 square feet Ownership: Public Available Incentives: Federal, VCP Contact Name: Joe Smith Contact Phone: (907)-555-8541	Assessed Value: \$900K Owner: City of House Currently Zoned: Commercial Investigation Status: Complete Remediation Necessary?: Remediation Status: Complete Contact Email: jsmith@housesny.gov Contact Fax: (907)-555-8302 Photo															
For more detail about this property, go to: www.housesny.gov/tildenrd																
Tax Information																
Tax parcel number (s): XXXXXXXX Are property taxes current? Yes Date taxes last paid: 08/01/1998 Any easements in effect? No Is a copy of the title insurance policy available? No	Amount of annual property taxes: \$.XX Amount owed: \$0.00 Any liens or judgements in effect? No Any land use or deed restriction in effect? No Any land use or deed restriction in effect? No															
Property History																
What year was the property first improved? 1974 Has property use or ownership changed? Yes	How many years has the property been in operation? 24 <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Years</th> <th style="text-align: center;">Owner name</th> <th style="text-align: center;">Type of use</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1974-1982</td> <td style="text-align: center;">Mr. Smith</td> <td style="text-align: center;">Commercial</td> </tr> <tr> <td style="text-align: center;">1982-1990</td> <td style="text-align: center;">Mr. Jones</td> <td style="text-align: center;">Commercial</td> </tr> <tr> <td style="text-align: center;">1990-1998</td> <td style="text-align: center;">Ms. Johnson</td> <td style="text-align: center;">Commercial</td> </tr> <tr> <td style="text-align: center;">1998-current</td> <td style="text-align: center;">City of House</td> <td style="text-align: center;">Commercial</td> </tr> </tbody> </table>	Years	Owner name	Type of use	1974-1982	Mr. Smith	Commercial	1982-1990	Mr. Jones	Commercial	1990-1998	Ms. Johnson	Commercial	1998-current	City of House	Commercial
Years	Owner name	Type of use														
1974-1982	Mr. Smith	Commercial														
1982-1990	Mr. Jones	Commercial														
1990-1998	Ms. Johnson	Commercial														
1998-current	City of House	Commercial														

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Figure 4. (continued)

Transportation	
Traffic study completed? Yes	Interstate access: On property
Public transportation: On property	Water-front access: On property
Airport access: 7 mi.	Rail: 17mi.
Market Information	
Is a zoning change required? No	Has a developer been identified? No
Has a development plan been completed? Yes	Has a market study been completed? Yes
What is the highest and best end use? Commercial	Transfer options available: Owner wants to sell
Utilities	
Public water: Nearby and easy to extend	Public sewer: On property
Electricity: On property	Gas: Not in area
Environment	
Wetlands: No	Sensitive ecosystem or habitat present: No
Endangered species present: No	Historic or archaeological properties present: No
Located within 100-year flood plain: No	Located within 500-year flood plain: Yes
What is the highest and best end use? Commercial	
Remediation studies and status	
Phase I-ESA (ASTM 1527-97) completed? Yes	Phase II or subsequent investigation completed? Yes
Copies of reports available? Yes	Is property entered in a State Voluntary Cleanup Program? No
Is remediation in progress? No	Is regulatory sign-off completed for this property? Yes
What lists is the property found on? NPL, RCRA	Has the property ever been in litigation? No
Location Property Tax Information History Transportation Market Information Utilities Environment Remediation Photo	
Close	

information described. The second method is to link directly into the database of the data provider. The user would have immediate access to all available information; and no additional searching would be necessary. The second method has obvious advantages for the user, but it is much more complicated from a programming perspective. The method requires a high level of cooperation between the operators of a web site of brownfields properties and data providers. In many cases, technical obstacles may make the second method impractical. The overview of the property also may include a direct link to reports and studies about the property that are available electronically, or provide information on where these reports and studies can be found.

2.5 REGISTRATION FUNCTION AND AUTOMATIC E-MAIL NOTIFICATION

One step to increase user interest in a brownfields property web site is to provide the capability for users to receive e-mail notifications when new properties are added to the database. This feature of the web site could be made available to users who choose to register by entering contact information (name, organization, and e-mail address). The e-mail notification process should be automated. When a new web site is launched, users may be discouraged from returning to the site if the initial number of properties listed is small. The e-mail function will help to recapture users as new data are added to the database. After the number of listings increases significantly, the e-mail notification function can be modified to notify users about new listings of properties that meet specific parameters identified by the user. For example, the user could be notified only if a property added to the database has characteristics that match the search criteria previously established by the user.

2.6 DATA PROVIDERS (ADD/UPDATE RECORDS)

To add properties to the database, data providers could be provided with options. The number and types of options should be dependent upon the potential number of data providers, whether the database will be local, state, regional, or national, and the extent of quality control of the data. For example, the following options might be appropriate for a state or national database:

1. Use a web-based data entry form. The data provider simply fills out the form on the web page. The data are added to the database when the user clicks an "Update" button at the bottom of the screen.
2. Download a copy of the web site's data structure in an MS Access format. A simple user guide (one or two pages) providing technical guidelines for either a novice user or a

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database specialist could be prepared and made available for downloading along with the MS Access database. After all data have been transferred into the MS Access database, the data provider sends the MS Access database back to the operator of the web site by e-mail or file transfer protocol (FTP). The option allows the data provider to complete the file when convenient and to generate their own copy of the information provided.

3. Submit large volumes of data in digital format, such as MS Access or ASCII comma delimited. The data could then be imported into the database for the web site.

To help ensure data quality and security, each data provider should be given a password, automatically generated by the system. Data providers must use their passwords to gain access to their records. Use of a password ensures that unauthorized persons will not be able to alter information about properties. At any time, data providers should be able to return to the web site to modify or update the information they have submitted. Data providers should be required to return to the site on a routine basis, such as, at least once every six months to keep records current. The status of a record could be listed as “Active,” “Inactive,” or “Sold.” Active sites could be those sites that currently are for sale. Inactive sites could be sites that have been or may become available for sale, but currently are not for sale. Sold sites could be sites that have been sold and are no longer available to purchase. Data providers should be free to change the status at any time.

2.7 WEB SITE ADMINISTRATION

A web site should include a web page that can be used for administration purposes and not accessible to the public. It should be accessible only to approved administrators who need instant access to information about the performance of the web site. Access to the administrative page can be controlled through a login screen.

Use of a web site should be logged to gain a better understanding of how users might benefit from a brownfields property web site. System administrators could use the record of user activity to identify functional areas that require improvement. An administrative web page could include the following features:

- A summary of the system use logs,
- Functions for adding, deleting, and updating all records
- Functions for controlling e-mail notifications to registered users and data providers

3.0 DATA DESCRIPTION AND ORGANIZATION

This section describes the data structure of the web site design prepared by EPA and procedures for managing data and maintaining a web site.

3.1 DATA STRUCTURE

An Oracle database could be structured to make the best possible use of other potential sources of data, such as the New Jersey Brownfield Site Marketing Inventory and Pennsylvania's Land Recycling Program.

Table 1 shows those suggested fields that should be completed to list a property in the system. Of the 13 data elements shown in the table, 10 can be used as search criteria.

Table 1
Suggested Data Elements That Should Be Listed for Each Site

Field Name	Detail	Definition
1. Site Location	Street name or route number of nearest highway <Text>	Name of street on which the property is located, or for remote locations, the name or route number of the nearest highway.
	*2. City <Text>	Name of the city in which the property is located.
	*3. County <Text>	Name of the county in which the property is located.
	*4. State <Two-letter code>	Name of the state in which the property is located.
	*5. Zip code <Five or nine numbers>	Five- or nine-digit Zip code in which the property is located.
*6. Site Size	Acreage <Quantify> or Square feet <Quantify>	Total area that is available for redevelopment at the site.
*7. Ownership	" public " private	Indicates whether the owner of the property is a public or private entity.
*8. Proposed Zoning	" industrial <Check appropriate box> " commercial " residential " retail " mixed use " other	When a master plan for redevelopment has been approved for the area in which the property is located, indicate the proposed zoning for the property. When no master plan has been approved, enter the likeliest option for zoning of the area.
*9. Status of Site Investigation	" in process <Check appropriate box> " complete	Indicate the current status of studies to characterize the level and types of contaminants at the property.

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Field Name	Detail	Definition
*10. Status of Remediation	" in process <Check appropriate box> " complete	Indicate the current status of activities to clean up contaminants at the property that must be treated or removed before redevelopment can begin.
*11. Redevelopment incentives	" local <Check one or more boxes> " state " federal " loans " tax relief " grants " bonds " VCP " comfort letter	Indicate the local government, state, and federal incentives that have been approved or are available to encourage redevelopment of the site.
12. Site Contact Name	First name <Text> Last name	Name of person who can provide additional information about the site.
13. Site Contact Phone Number	Telephone number	Telephone number of contact person

* Searchable information

3.2 DATA MANAGEMENT AND SITE MAINTENANCE

Web sites that include information about brownfields properties should be designed in a manner that will minimize the time required for data management and site maintenance. A routine schedule of data management tasks is necessary to insure that the database remains current. Outdated records must be deleted, and new sites must be added to the database. Insofar as possible, the data management process should be automated. Outdated records should expire automatically after a reasonable time period, such as three months. Each quarter, automatic e-mail notifications should be used to warn data providers that their records are about to expire. After receiving e-mail notification, the data provider should be required to return to the web site to delete outdated records and to renew records that should remain active.

Although automation will reduce the time required for data maintenance, database specialists may be required to validate new records and to perform certain data conversion or manipulation tasks. The database is not likely to grow quickly if users are required to enter all new records one at a time, using the web page data entry form. Therefore, if the user has more than 20 new sites to add to the database, the user should have the option of providing data to the system operator in an MS Access data structure that can be downloaded from the brownfields property web site. The user can update the MS Access database by manually entering records on predesigned forms. As an alternative, the user could update the database using standard functions of MS Access. The updated MS Access database could be sent to the system operator through e-mail or FTP. Database specialists for the system operator could import the new data

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into an Oracle database. If the user has more than 100 new sites to add to the database, the user can provide the system operator with a data dump in any digital format, including MS Access, MS Excel, Oracle, or delimited text files. Database specialists could then convert the data into a usable format and import the data into the database.

Table 2 presents a sample data update cycle. The data maintenance cycle is the time elapsed from the date on which the brownfields property web site receives the data and the date on which the data become “Active” in the database. Only “active” records should be visible to users.

Table 2
Sample Data Maintenance Cycle

Method of Data Capture	Data Update Cycle	Advantages	Limitations
Web-based data entry form.	1 week	Anyone who has access to the Internet can add new properties to the database. Data entered are posted to the database immediately.	The process of entering information can be slow and time-consuming, particularly when the user is adding a large number of records. Although data are posted to the database immediately, the data must be reviewed before the listing becomes active and is made available to the public.
MS Access (downloaded from web site)	3 weeks	Large amounts of data can be imported into MS Access through standard data manipulation techniques. The process is less time-consuming than entering data through a web-based form.	Novice computer users may not prefer this option. A user who has only one or two new properties may prefer to use the web-based form rather than MS Access.
Data dump	3 months	Data providers are not required to perform any data entry. The process will allow the transfer of large amounts of data.	The process of importing data may be labor-intensive for the system operator. The process is beneficial and cost-effective only if the data dump includes a large number of properties.



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