PolicyLink

Equitable Development Toolkit

Brownfields

Updated January 2003

Lifting Up What Works®

What Is It?

In every aging industrial city there are sites that lie empty: old factories, transportation centers, power switching stations, for example. Some are surrounded by a high chain-link fence, some have mysterious barrels scattered among the weeds. Observers suspect they might be contaminated with dangerous chemicals and heavy metals, and many of them are. This suspicion keeps the sites from being redeveloped and they remain hazardous spots of neighborhood blight.

In the 1990s, sites like these were given a name: "brownfields." The Environmental Protection Agency (EPA) defines brownfields as "abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or *perceived* environmental contamination." Although the term "contaminated site" conjures images of extreme cases like Love Canal, brownfields are usually characterized by low and medium levels of environmental contamination.

Brownfields: Disproportionately Located in Low-income Communities

The Council for Urban Economic Development conducted a survey of 107 successful brownsfields redevelopment projects in the nation. The study analyzed demographic data within a one-mile radius of the projects and found that:

- Median minority population was 35 percent, compared with a 24-percent national average
- Median per capita income was $10,202, compared with the national average of $14,420
- Median percent below poverty was 25 percent, compared with a 12.6 percent national average

Source: Council for Urban Economic Development

There are approximately 450,000 to 600,000 brownfields in the United States, ranging from large industrial sites to small abandoned gas stations and dry-cleaners. By their very nature, brownfields are as inseparable from issues of social, environmental, and economic justice as bank redlining or school disinvestment. . Often the result of the shift from manufacturing to service industries, brownfields are found disproportionately in low-income urban communities. In neighborhoods that are poor and increasingly non-white, companies have walked away from unneeded, contaminated sites, leaving brownfields as a legacy of disinvestment.

But brownfields also represent opportunity. They are often sizable parcels of land, situated near existing infrastructure, transportation routes, and labor pools. And with today's concerns about sprawling growth, their central locations provide an attractive alternative to outlying areas. Redeveloping brownfields can provide benefits to the region and the local community.

This tool is designed to help community-based practitioners and community development corporations (CDCs) address brownfields in their communities. It provides a series of planning steps, from assessing a site to marketing it, and covers options for managing economic, legal, and environmental risks along the way. When properly implemented, the redevelopment of a brownfield is a wonderful opportunity for

community revitalization, for resurrecting a dilapidated and potentially hazardous property into one that contributes to the housing, workforce, transit and other components of a

Why Use It?

Returning brownfields to productive use has benefits above and beyond economic development. It is an important tool for building stronger, healthier, more livable communities. Revitalizing brownfields:

Improves a community's health. Cleaning up potentially toxic sites benefits the health of a community. Low-income, urban communities are disproportionately affected by asthma, cancer, and other illnesses related to environmental degradation. Contaminated industrial sites contribute to health problems by leaching toxins into the water supply, releasing hazardous dust into the air, and, if the site is not secured, bringing children who play there in direct contact with toxins. As long as a complete, satisfactory clean-up is the first step , brownfields redevelopment can remove such dangers from a neighborhood.

Promotes smart growth. Encouraging the redevelopment of brownfields is an important way of "recycling" parcels of land rather than building on previously undeveloped "greenfields." Greenfields development requires new roads, new sewer lines, and other infrastructure, and contributes to sprawling development patterns. When brownfields are redeveloped, further infrastructure is unnecessary, which lessens the burden on the environment and taxpayers.

Job training

Providing job training in the field of hazardous waste clean-up for positions such as lab and environmental technicians or compliance reviewers, can provide communities with high-wage, skilled jobs.

Promotes economic growth. Abandoned sites do not contribute to an area's tax base. Redevelopment of brownfields leads to an increase in a city's tax base by providing jobs, revenue, and growth.

Creates new jobs. Revitalizing brownfields creates many jobs during clean-up and construction, as well as when the site is put to a new use. Instituting local hiring agreements and providing job training can direct these jobs to the surrounding residents. In 1997, the St. Paul Ecumenical Alliance of Congregations (SPEAC) and Interfaith Action in Minneapolis won a seven-year, $68 million commitment to brownfields cleanup. Local development authorities estimated that the new funds would produce close to 2000 livable wage jobs. Job creation had been a key goal of the campaign from the beginning, and once the funding was obtained, organizers were able to connect to workforce development programs.

Empowers the community. Done properly, brownfields redevelopment relies upon the active participation of the affected community, from identifying priority sites to confirming that clean-up has been carried out satisfactorily. Redeveloping a long-standing problem site can be a focal point for organizing community residents, increasing awareness of a shared physical space, and building ties among residents, business owners, and others with a stake in revitalization. It is empowering for communities to address a problem that directly affects them.

Benefits businesses. Brownfields sites can give competitive advantage to companies that can make use of the proximity of these sites to labor pools; markets, including suppliers and customers; and transportation systems such as highways, rail lines, and buses.

Addresses community needs. Brownfields redevelopment can be an opportunity for a community planning process that identifies key community needs, such as affordable housing, shopping, health clinics, transportation, or open space. An organized community can then work with the city and developers to use

cleaned-up brownfields sites to build these things. Because they are near existing infrastructure, brownfields sites are often ideal locations for new institutions.

Tenton, New Jersey

The city of Trenton targeted the closed Circle Factory for brownfields remediation. Working with the property owner, the city designed a plan that would redevelop the site for the light industry and for senior's housing. The city selected Lutheran Social Ministries (LSM) to be the nonprofit developer for the residence. LSM applied for federal Low-Income Housing Tax Credits. With the credits, they completed the remediation and began construction of 70 affordable senior apartment units. **Source:** NEMW Institute

Removes blight. Sites that are abandoned, toxic, odorous, and ugly can have a distressing effect on those who live near them and must daily see and experience them, especially when they are part of a larger pattern of neglect. Getting rid of such blighted sites can be a significant psychological improvement for surrounding residents.

Key Players

Creating a limited equity cooperative is both a technical and political process. It requires the cooperation and assistance of many different people.

- **Neighborhood Residents.** People in the neighborhood need to be accepting of the co-op. They may be advocates for the co-op, recommending the creation of LEHCs and helping with the planning and control of gentrification. They may be potential members of the co-op. They may also oppose LEHCs for a variety of reasons. NIMBY participants may oppose any type of low-income housing developments.
- **Sellers.** When real estate markets are weak, sellers may be willing to offer longer escrow periods- very useful in creating the necessary time to pull together the financing. A seller may offer to finance part or all of the sale. Sellers may also be willing to enter into a donated sale or partially donated sale, which lowers the cost to the buyer. When real estate markets are stronger, sellers are less likely to agree to these terms. Developers should explore these possibilities; the seller may be sympathetic to their goals and offer excellent terms even in a hot market.
- **Public Agencies.** Agencies at all levels of government can be helpful or obstructionist in creating LEHCs. They are influential in obtaining financing. They can be central to the process of obtaining zoning changes or needed variances. When neighborhood opposition arises, agencies can play an important role with their recommendations to decision-making bodies.
- **Co-op Members.** Members need to be willing to cooperate, to participate in the governing and managing of the co-op, and willing to accept limitations on their equity accumulation.
- **Developer.** The developer must be willing to work with a large group, accept input, and seek solutions. This work adds time to the process and increases the costs as well. When sweat equity is involved, the developer must be willing to work with the residents and to help train them.
- **Trainer and Organizer.** These functions may be handled by the same person or by different ones. Both functions require great skill and are crucial to the functioning of the cooperative.

How to Use It

Targeting brownfields for redevelopment can be a powerful tool for the overall revitalization of a community. It is also, however, a long-term project, often taking many years before a site is in use again. The endeavor can also be expensive and requires a careful balancing of concerns about health, liability, and reuse.

Health: Brownfields contain a range of toxic substances, such as leaded gasoline, PCBs from electric transformers, and mercury from industrial processes. Environmental health advocates are often concerned that in the rush to clean up and redevelop brownfields, the health and safety of future users and neighbors of the site will be compromised. If a site is inadequately cleaned, future residents or workers on the site can be in more danger than if the site had been left empty. In Hoboken, New Jersey, for example, a former mercury vapor lamp factory was converted to residential lofts without adequate clean-up. When mercury start oozing from the walls, all the residents had to be relocated and treated for elevated blood levels of mercury, an extremely potent neurotoxin.

How clean is clean?

This question is inevitable posed and it is important to consider different standards for risk. Risk depends on the amount one is exposed to and the length of exposure. Risk is measured on the lifetime probability that a toxic chemical will cause cancer or death. Range of "acceptable" risk usually falls between one in 10,000 people and one in 1,000,000. Most states require brownfields that will be restored for residential use to meet the cancer risk of (one in 1,000,000. Brownsfields restored for industrial or commercial use are often allowed to meet the cancer risk range of (one in 10,000).
Source: Urban Habitat

Liability: Because environmental remediation is expensive, the question of who is responsible for paying has stalled many clean-ups. The 1980 "superfund" law attempted to handle the complicated problem of determining who had caused contamination by making any owner of a site liable. The 1980 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or "Superfund") law attempted to handle the complicated problem of determining who had caused contamination by making *any* owner of a site liable for clean-up costs of "any release or threat of release of hazardous substances."] This action made developers and lenders extremely unwilling to work with potentially contaminated sites, and many say it caused many mildly contaminated sites to remain abandoned. In reaction, many states have initiated voluntary clean-up programs, whereby landowners promise to clean a site in exchange for protection from liability. Supporters say it has allowed the clean-up of hundreds of long-abandoned sites. Environmental health organizers say this goes too far, both letting polluters off the hook and leaving communities with no leverage to challenge inadequate clean-ups or new pollution.

Reuse: The ultimate goal for brownfields redevelopment is a return to productive use. The kind of use should take into account the community's needs, the safety of the site, and economic feasibility. In some cases the cost of clean-up is greater than the market value of the cleaned land and will creative financing efforts to redevelop.

Getting Around "Market Value"

In 1993, the Ryan Company, a local developer, approached Minneapolis with a plan for the blighted Johnson Street Quarry. If the Minneapolis Community Development Agency (MCDA) Acquired various quarry parcels and conducted necessary remediation, Ryan would purchase the site for twice its market value (which, even then, would be significantly less than the public costs to prepare the site) and build a 430,000-square foot discount shopping mall. Project costs are expected to total nearly $60 million, divided between public and private sources. Despite high expenditures, the MCDA views the deal as public funds well spent. Benefits include extensive environmental cleanup, blight elimination, creation of 17,00 full-and part-time jobs, tax-based enhancements (both property and sales), and stabilization of a neighborhood that had been declining. The city will recoup its costs within 15 years through property taxes and revenues generated from the tax increment finance district.
Source: Northeast Midwest Institute

Redeveloping brownfields in a sustainable way that accounts for health, liability, and reuse is a process that must incorporate the long-term vision of the community and address the current needs of residents without compromising the ability of future generations to do the same. Every site is different; levels and kinds of pollutants, goals for reuse, and attitudes of the current owner all vary, so there is no "cookie-cutter" approach for clean-up and redevelopment. This tool is a guide through the general process, the questions to ask and steps to consider. It is in no way a substitute for sound legal advice and consultation.

The Brownfields Redevelopment Process

The brownfields redevelopment process can be broken down into four major stages. In stage 1, pre-development, consultants make initial assessments of the site's contamination and potential for reuse. This stage should include a community planning process. In stage 2, a detailed plan for acquisition, remediation, and development is worked out, and regulatory agencies are brought in to approve the plans. In stage 3, the site is remediated and prepared for construction, and in stage 4 a new use is put into place. At every stage except stage 4, work on clean-up and on new uses is proceeding simultaneously, and later stages can sometimes start before earlier stages are completed.

Stage 1: Testing and Pre-Development

In stage 1, a community developer organizes stakeholders, especially residents, and identifies a site, as many communities have multiple brownfields sites..With some predevelopment funding in hand, the group can work on three fronts: the phase I environmental assessment, locating and negotiating with the site's owner, and preliminary planning for reuse. A more complete environmental assessment is carried out after gaining site access.

Organize residents. Brownfields redevelopment requires communication and collaboration among many stakeholders, including residents, other community members, city governments, landowners, environmental regulators, other government agencies, developers, investors, and consultants. The earlier each of the stakeholders are involved, the more invested each will feel in the process.

Organizing: It's Even in Developer's Interest

Deeohn Ferris of the Washington Office on Environmental Justice argues, "There really is no reason that consulting members of impacted communities should take any longer...than the current system." This is especially true when a developer who fails to consult with a community ends up running afoul of ti and faces a lawsuit as a result. If consultation beforehand does nothing more than avoid the risk of litigation, there remains the possibility that it can offer developers a very good deal.

Source: "Brownfields of Dreams," The Amicus Journal

Arguably the most important of these stakeholders are the residents closest to the site. They are living with the problems of the brownfields, and will be living with the results of a redevelopment project. Organizing residents to participate in the decision-making process should therefore always be the first step. Consider providing training, organizing support, and other resources to make it possible for community members to make a meaningful contribution.

Pick a site. Since brownfields are often clustered in a neighborhood, there may be several choices for redevelopment. Consult with residents to see if there is a clear priority based on their experiences. Some initial investigation to see which sites have the most serious environmental issues and which have the greatest potential for redevelopment can point a group in the right direction. Priorities may differ based on whether a group's and/or residents' primary goal is removing a specific toxic threat or attracting a specific kind of economic development.

Explore predevelopment grants and loans. Find preliminary funding sources for remediation and site purchase. The EPA's Brownfields Economic Redevelopment Initiative provides funding for the initial stages of brownfields redevelopment. For more ideas, see the financing section.

Finding a Consultant

To find a reliable and efficient consultant, ask other CDCs or organizations that have been through the redevelopment process for references and recommendations.

Phase I Environmental Assessment. The environmental assessment determines what, if anything, is contaminating the site, and where and how much so that an appropriate clean-up plan can be determined. Hiring an environmental consultant can greatly expedite the process. A thorough assessment is considered required "due diligence" for any prospective site owner, and will reduce the chance of incurring liability problems for the sponsoring group down the road.
Phase I of this process determines if there is *potential* for contamination of the site based on the site's previous uses. If Phase I reveals such potential, further testing (Phase II) is necessary. The Phase I process has four components:

- Review of historical records to determine past owners and previous uses of site. (For example, the site of an abandoned Magic Marker factory in Trenton, New Jersey, had previously been the location of a battery manufacturer, making it highly likely that the site contained lead, a component of many batteries.)
- Survey of site and an assessment of surrounding areas

- Interviews with owners and local government agencies
- Evaluation of site and producing a final report

A tip to save time, money, and headaches

Before undertaking a Phase I assessment, find out if a previous analysis was conducted on the site. If no prior assessment is found, there are companies that offer quick assessment reports on-line. Environment Data Resources and Fidelity National Information Solutions gather risk management information from a variety of sources. These initial assessments cost under $200 and are produces in minutes. Checking neighboring property uses from city historical documents is another way to expedite the process.

Costs for conducting a Phase I assessment range from $2,500 to $5,000. It is better to spend the money up front, during Phase I, than to deal with delays and costly legal matters at later phases. The American Society for Testing and Materials (ASTM) has guidelines that set minimum requirements for environmental assessments.

Get Site Access . To complete an environmental assessment of the site itself, stakeholders need to gain legal access to the site from the owner. (A city records office will generally provide the owner's name and other pertinent information.) Sometimes site access or control will necessitate a temporary measure-such as an option or a lease-until the group determines that it has the funding for clean-up and redevelopment. Many owners, however, fear being held liable if serious contamination is found, and so may not be co-operative.

EPA and the Brownfields Economic Redevelopment Initiative

In 1995, the EPA announced the Brownfields Economic Redevelopment Initiative, which helps communities revitalize properties, mitigate potential health risks, and restore economic vitality to areas where brownfields exist. EPA brownfields efforts fall within four overlapping categories:

- Provide grants for brownfileds pilot projects
- Clarify liability and cleanup issues
- Build outreach among federal agencies, states, municipalities, and communities
- Foster local job development and training initiatives

Source: Environmental Protection Agency

Begin Reuse Planning. If there is a community plan in place, refer to it, and engage stakeholders in determining the ideal use for the site. Community vision and input is crucial. Residents will be ultimately affected by the redevelopment choices, which should address the community's most pressing needs, such as affordable housing or retail space. If there has been no recent community planning for the area, this would be a good time to initiate at least a moderate version, if possible.

New Life for Illegal Dumps

After much community pressure, "A twenty-foot mound of illegally dumped tires and scrap metal has been hauled away, and --though the owner wants to bring in more polluting industry, in the form of an asphalt batching plant--a coalition of Roxburians has come together to champion community-friendly alternatives.

When the residents of Roxbury, Massachusetts, look at these two sites, they see an urban wasteland: but they also see that these six acres could be cleaned up and turned into a mix of light industry, small business, retail stores, and housing. Grassroots groups are canvassing the community for ideas. Architectural drawings have been made of various alternatives."

Source: "Brownfields of Dreams," The Amicus Journal

Developers should also invest in a site marketing-feasibility study, which covers zoning, potential contamination, and rough cost estimates. With this information, the planning group can determine a development goal for the site. Be creative about your options. For example, in community land trusts a nonprofit owns the land and residents own the homes on the land, making such trusts a reasonable goal for a brownfields site where housing is needed. During this preliminary site planning, initial decisions about structure can be made, including the number of stories and units that will be built.

Phase II Environmental Assessment. If Phase I indicates that the site might be contaminated, a Phase II site investigation is necessary. This phase involves taking samples from air, water, and soil in order to determine the location, type, and amount of environmental contamination. After analyzing the samples, the environmental consultant prepares a report that describes in detail the type and extent of the contamination and includes recommendations for clean-up alternatives. The Phase II investigation is costly: depending on the expected level of contaminants, fees range from $10,000 to $50,000; the assessment takes approximately six to eight weeks to complete.

Risk-Based Decision Making

An approach to clean-up that integrates many considerations, such as costs, public health risks, technical feasibility, end use, and public acceptance.

Phase III Evaluation and Remediation Options. This phase examines the potential risks of the contamination. The amount of risk depends on many things:

- Type of contaminant
- Amount of contaminant
- Physical characteristics of the site and the location of the contaminant. For example, soil pollution on a site directly over an aquifer that contributes to drinking water is a very high risk. Contamination in building walls that has not spread to the ground and can be easily removed would be a lower risk.
- Surrounding population. High proportions of children, elderly, or people with weakened immune systems all make for higher risk.
- Future use of the site. Lead contamination is a much higher risk, for example, if children are among future users of the site.

Taking all of these points into account, a remediation, or clean-up, plan is developed for the site. The plan indicates allowable remaining concentrations of each contaminant. These numbers will also have to take into account federal and state laws on specific substances. You may want to check whether local agencies also have jurisdiction, particularly if only small amounts of contamination are found.

Remediation options depend on the hazards found and proposed site use. They can include:

- Capping: covering contaminated soil with an impermeable surface, like blacktop.
- Removal/extraction: this usually means digging up the entire affected area and taking it to a hazardous waste landfill. There are some more sophisticated measures available, however. Phytoremediation is a process by which certain plants pull heavy metals out of the soil and concentrate them in their stems and leaves for easy removal.
- Treatment: neutralizing or rendering contaminants harmless. For examples, see the Technology Tree.

What type of remediation is possible?

The Center for Public Environmental Oversight (CPEO) developed a "Technology Tree." This site helps public stakeholders participate in the selection of clean-up remedies and other relevant technologies. The Tree allows a user to enter the contaminants and where they are found (such as soil or water), and then provides a list of technologies that can help relieve the problems.

Source: CPEO's Technology Tree

Community input and education is extremely important at this point. The community needs to be informed of potential benefits and risks arising from various reuse and remediation options. Community members should be able to have a say in the final level of remediation chosen, and will be much more supportive if their fears and priorities are addressed ahead of time.

Stage 2: Complete Development Planning

Now that the sponsoring group knows the extent of the remediation needed and has done a feasibility study on the desired reuses, it can make a decision about whether it is possible to proceed. This stage is about nailing down the details: site acquisition, relationships with regulatory agencies, financing, and architectural work.

Secure legal title and needed zoning variances. This includes getting site control and meeting any planning requirements under a state's jurisdiction. If the site is zoned for commercial use but the community needs more affordable housing, then the city or developer must seek permission to use the land in that manner. Land use also depends on the remediation plan and the clean-up levels.

Determine regulatory requirements. First, determine which agency has oversight of the remediation. Regulatory agencies vary state by state. The Northeast-Midwest Institute provides links for state agencies. Local agencies, such as a public health agency, might also get involved.

State Regulators

Each state has its own agencies and rules about clean-up. In California, for example, the Department of Toxic Substance Control (DSTC) has oversight responsibility. However, if there is water contamination, then jurisdiction is shared with the Regulatory Water Quality Control Board (RWQCB).

Materials generated during a brownfields clean-up can also fall under the jurisdiction of the Resource Conservation and Recovery Act (RCRA). It regulates hazardous wastes from "cradle to grave," and allows state and federal environmental protection agencies to create regulations concerning all stages of a hazard's "life," including generation, storage, transport, treatment, and disposal. RCRA requires all parties involved with the movement of hazardous waste to keep detailed records and ensure the proper labeling of containers.

Some states also have specific regulations that address the impact of any given development on the environment. For example, the New York State Environmental Quality Review Act (SEQRA) requires all state and local government agencies to consider environmental impacts equally with social and economic factors during decision-making.

The California Environmental Quality Act (CEQA) requires that all proposed projects undergo environmental review before construction can begin. If a CEQA study determines that environmental damage could occur, an Environmental Impact Report (EIR) is required. This delays the process at least six months and usually requires developers to mitigate future problems, such as considering increased traffic congestion.

Put together financing. As with most community development projects, most brownfields redevelopment requires multiple financing sources, usually a combination of private and public sources, such as grants and loans.

Develop formal site plan. Based on the environmental and remediation assessments, the developer and architect draft the site plan and architectural design. Community groups can develop agreements with the city to ensure that they are informed of changes to the original design.

Plan in Community Benefits. If a private developer or company is going to become the owner/developer of the project, community representatives should insist on tangible accountability and community benefit measures. Even if a nonprofit developer will be coordinating the process, making explicit agreements and goals is a good idea. Community benefit plans can include local hiring goals for jobs during clean-up, construction, and final use; affordable housing targets; and transit-oriented development plans. If a lower-level clean-up is being done, the community may also want to advocate for accountability measures-such as deed restriction-to ensure that the land will never be used for a purpose for which it wasn't declared safe, and that contaminants supposedly being contained remain contained.

Brownfields Benefits

Community benefits that could attach to brownfields redevelopment include:

- Job training
- Living wage jobs
- Affordable housing set-asides
- Space for community institutions
- Transit-oriented development

Stage 3: Clean-up and Site Design

Clean-up. Once the developer meets the various regulatory requirements identified for clean-up and remediation, the clean-up process can begin. When clean-up is completed, the developer needs to get approval from the proper oversight agencies. Clean-up can take a long time, during which care should be taken to keep stakeholders actively involved and informed.

Better Bidding

Attaching equity and accountability measures to the bidding process is an effective way to ensure community growth and prosperity. Such measures include mandating bidders to pay living wages, and encouraging job training and retention programs.

Final Preparation for Construction .As the clean-up process is being completed, preparation for construction at the site can go forward.

- Accept bids from architects, construction firms, business owners, and operators.
- Obtain the proper permits and receive clearance from the delegated regulatory agencies. Consider deed restrictions to keep the site from being used for things that its remediation level is not safe for. For example, if it was cleaned for industrial use and secured with a cap, it should never be used for housing without further remediation, and the cap should stay in place.
- Acquire legal title to the land.
- Finalize all financing.
- The architects and developers finalize plans for the site. The stakeholders need to be a part of this process to ensure they are satisfied with the final plans.

Stage 4: Construction and Final Use

The final step in the brownfields redevelopment process involves putting a clean site back into productive use. This looks much like any other infill project.

- **Construction** . Demolish preexisting building, if necessary. Prepare site, perhaps with containment of any remaining contamination in mind. Construction can then proceed as normal.
- **Marketing and Leasing/Sale** . If the property will be used for commercial purposes, it should be leased or sold before completion of construction to secure financing. Before this step is completed, the sponsoring group should decide what business or individual will be responsible for the long-term operation of the site. The sponsoring group may own and operate the site, own it and lease it, or sell the site to a business owner.
- **Stay involved** . Once a development is completed, the sponsoring group and organized stakeholders should not disband entirely. They should maintain a relationship with the new owners or operators to ensure that community benefits agreements such as local hiring are being met, and to be sure that the site remains safe.

Challenges

Liability Problems

Because environmental remediation is expensive, the question of who is responsible for paying has stalled many clean-ups.

The 1980 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or "Superfund") law attempted to handle the complicated problem of determining who had caused contamination by making *any* owner of a site liable for clean-up costs of "any release or threat of release of hazardous substances." While this law encouraged industry to handle hazardous materials more carefully, reduce waste generation overall, and pursue pollution prevention technologies at their facilities, it also made developers and lenders extremely unwilling to work with potentially contaminated sites, for fear of being saddled with a huge clean-up bill for someone else's pollution.

CERCLA liability is applied:

- "Strictly": Liability without fault or negligence. Thus a recent owner of a property can be held liable for CERCLA clean-up costs even though he or she was in no way involved with the contamination.
- "Jointly" or "Severally": When there is more than one responsible party, the government can hold one or all of the parties liable for the entire cost of the clean-up.
- "Retroactively": Parties can be held responsible for contaminations that occurred before CERCLA in 1980, even though the activity was legal at the time.

Many observers say strict interpretation of CERCLA contributed to the abandonment of many mildly contaminated sites. Fearing liability, high costs, and potential risks associated with the sale of property, many owners prefer to leave the facility as it is rather than place on the market. This practice, called "mothballing," makes it difficult for even a willing developer to acquire some brownfields sites.
In an effort to alleviate some of these problems, regulatory agencies have adopted measures that provide liability relief for certain interested parties. These include:

- *The "innocent landowners defense."* This 1986 amendment to CERCLA frees those individuals or organizations that "did not know and had no reason to know" of any contamination at the site from liability. To qualify, the new owner of a property must have undertaken "all appropriate inquiry" into the previous ownership and uses of the property at the time of acquisition, "consistent with good commercial and customary practice."
- *Lender liability relief.* Also called the "secured creditor exemption," provides that as long as a lending institution does not participate in managing of a facility, it cannot be liable under CERCLA for contamination simply because it holds an ownership interest to secure the loan.

United States v Fleet Factors Corp.

This case was often used as an explanation for why lending institutions are so apprehensive about loaning money or owning brownfields sites. In the United States v Feet Factors Corp., a judge ruled that a lender could be liable under CERCLA if its involvement with a facility's management is "sufficiently broad to support

the inference that it could affect hazardous waste disposal decisions if it so chose." The bank was liable for clean-up costs because it owned and operated contaminated collateral after foreclosure.

Source: Northeas Midwest Institute

- *Voluntary Clean-up Programs (VCP).* Many states have instituted VCPs, whereby owners of a contaminated site agree to pay for the site investigation and remedial actions necessary for future use, granted they receive technical aid or protection from liability.
- *Comfort Letters.* These give prospective purchasers the comfort that no further enforcement action will be required once the appropriate clean-up is conducted.

Giving Comfort

In southern Vermont, the redevelopment of the Holder-Leonard Mill was in limbo for several years while the EPA debated whether the site should be listed on the National Priorities List (NPL)--a register of the country's most serious hazardous waste sites. Mase Securities International (MSI), a tenant in hte Holden-Leonard Mill, was eager to purchase teh site but would not proceed until all environmental and liability issues were resolved. Since April 1996, after EPA Region 1 indicated that no further steps would be taken to list the site on the NPL, MSI moved forward to make significant renovations to the historic building and created over 200 new jobs in Bennington.

Source: Northeast Midwest Institute

Liability relief can be a powerful tool in jumpstarting long-stalled redevelopment projects. It is not without its dangers, however. Environmental health and justice advocates have pointed out that each step, especially voluntary clean-up programs, reduces the ability of residents to hold companies accountable for past or future contamination or shoddy remediation jobs.

Difficulty Obtaining Financing

The financing section discusses some of the challenges that communities face regarding financing brownfields. Because of the real or perceived threat of contamination, coupled with liability concerns, many lenders have had a hands-off approach to brownfields.

"Brownlining"

A term given to lending practices of institutions that avoid doing business with properties that they perceive to carry an environmental risk. Also known as "environmental redlining."

Redeveloping brownfields can become more expensive than unused "greenfields." Banks are often reluctant to lend money for a site that can be greatly devalued and potentially very expensive to remediate. If a practice like capping-covering the contamination with layers of concrete-is to be used, it may also be costly to maintain the site in a safe state. As a result of these fears, lending institutions often engage in "brownlining"- avoiding lending transactions based on a fear that the land is contaminated.

Though it is difficult, in many cases a creative mix of public and private funding sources, liability protection measures, and options such as seeking land donations, have allowed brownfields redevelopment to go forward.

Confusing Regulatory Process

Some states have multiple agencies that oversee brownfields clean-up at the local, state, and federal level. The assortment of agencies often causes confusion and delays, as stakeholders grapple with which agency handles what. Additionally, many of the state and local agencies are overworked and lack financial resources to oversee the clean-up of smaller brownfields sites, further frustrating the process. Identifying the various regulators who have jurisdiction, involving them early on in the process, and understanding as much as possible about the regulations so the regulators' work is easier can help to smooth this process.

Ambiguous Clean-up Standards

The degree of clean-up is tailored according to proposed use, whether industrial, commercial, or residential. For example, for a commercially zoned property risk factors must be reduced to one in 10,000, leaving some potential contaminants. On the other hand, for residential use the number is one in 1,000,000. A site designated for mixed-used development can be especially confusing and the developer will need clearance from state regulators on the differing levels of clean-up for a site.

Official standards are also not always in line with what residents or potential users of the site consider acceptable risk. For those sites that are truly contaminated, balancing the values of health, safety, and redevelopment is a major brownfields challenge.

Success Factors

Ingredients for Success

Manage risks. The key to successful brownfields redevelopment is proper management of the economic, environmental, and legal risks involved. The California Center for Land Recycling (CCLR) provides a number of suggestions for managing the risks associated with brownfields redevelopment, including:

- *Contract with an environmental consultant*. Find a consultant who can perform Phase I and II evaluations. Propose a timeline consistent with project goals and review progress.
- *Consult with financial sources*. Find out what level of "closure" on the toxic mitigation the lender requires to provide funding.
- *Obtain access to property.* Obtain access to enter the site for preliminary samples. Owners are sometimes unwilling to allow access until escrow for fear of potential contamination being discovered.
- *Request disclosures.* Ask the site owners for any information they have regarding potential environmental issues, such as previous land use and site history.
- *Consider any and all legal protections*. Research statutory and regulatory procedures, such as EPA policies regarding limited liability and voluntary clean-up programs.
- *Select clean-up process*. Based on the Phase II evaluations and proposed use of site, select an optimal remediation process.
- *Assign clean-up costs.* How much will the buyer or seller contribute to clean-up costs? How will costs be shared?

Keep community residents informed and involved. For community input to have real meaning, residents must be kept informed about developments, and given real opportunities to provide opinions and influence decisions. To make this possible, some training in brownfields, environmental health, and remediation may be necessary so that the involved residents can knowledgably participate in the conversation. This will also help alleviate any unwarranted fears about the reuse of the site.

Plan for the long haul. Brownfields remediation can be a long process. Often the longest periods will produce little visible progress, as they involve putting together funding or working with regulatory agencies. Planning from the beginning for a long process and paying attention to sustaining both the sponsoring organization and the group of stakeholders will be important in seeing a project through.

Be creative about potential uses. Often brownfields sites are zoned for industrial uses in an area where industry has declined and a different use would make more sense. On the other hand, sometimes residents only consider housing as an option, when the site may be better suited to light industry, which could be a fine neighbor and produce stable jobs. Make sure all potential uses of a site are considered.

Financing

The process of acquiring, cleaning up, and redeveloping brownfields can be very expensive. Fear of contamination can increase lending costs by three-fold and clean-up costs can range from the tens of thousands into the millions of dollars. Lenders are often hesitant to lend money to small nonprofit developers working on brownfields because of the possibility that the brownfield property, their only collateral, may plunges in value due to found contaminants. Non-profits are also usually interested in small parcels of land in low-income communities, where returns on investment are much smaller than for prime locations, such as waterfronts, which are more attractive to for-profits and cities.

Where does brownfields funding come from?

The Council for Urban Economic Development (CUED) surveyed 107 successful brownfields projects around the nation. The found that 30 percent of the funding came from public sources, from which:

- 51 percent came from local sources, such as municipal debt, Tax Increment Financing (TIF), and loans from economic development organization.
- 38 percent came from state programs, in the form of loans and grants.
- 11 percent came from federal programs, in the from of loans, grants, and tax credits.

Source: Council for Urban Economic Development

As a result of these complications, brownfields redevelopment projects need a combination of public investment and private financing to be successful. In addition, measures that simplify the regulatory environment, provide liability relief, and clarify clean-up standards (see Challenges) can make lenders more comfortable.

Since the inception of the EPA's Brownfields Initiative Program in 1995, there has been a growing interest in revitalizing brownfields and the availability of funding and the number of incentives offered to communities have markedly increased. The Brownfields Center at Carnegie Mellon University offers an instructive guide to funding for all stages of brownfields redevelopment. The Brownfields Financing Options site is available through the Projects link on Carnegie Mellon's web site.

Federal Financing Tools

The two main federal agencies that directly work with cities and communities to support brownfields work are the EPA and HUD. The Army Corps of Engineers also provides technical assistance for assessment, clean-up, and redevelopment in those areas where the brownfields redevelopment will help water quality, such as sites near rivers and lakes. The Department of Commerce's Economic Development Administration and the Department of Transportation (through the Livable Communities program) also support the redevelopment of brownfields.

U.S. Environmental Protection Agency (EPA)

The EPA offers a number of funding resources within its Brownfields Economic Redevelopment Initiative including:
Pilot programs, to assess brownfields sites and to test clean-up and redevelopment models (each selected

site is funded up to $200,000 over two years).
Job training pilot programs, to provide remediation work to communities affected by brownfieldsand prepare residents for future work in environmental fields.
Clean-up loan fund programs, to capitalize local revolving loan funds that will make loans for the environmental clean-up of brownfields. Each loan is funded up to $500,000 over five years.
Targeted Brownfields Assessments, to provide funding and/or technical assistance for environmental assessments at brownfields sites throughout the country.

U.S. Department of Housing and Urban Development (HUD)

HUDoffers several programs that fund communities and cities working to redevelop brownfields.
Brownfields Economic Development Initiative (BEDI). BEDI funds provide communities with clean-up and economic redevelopment funds. These funds are used to improve the viability of projects funded with Section 108 loan guarantees. They ensure that a project will be financially successful and will be able to repay the Section 108 loan guarantee. BEDI funds can be used for acquiring land, economic development, and related activities. BEDI grant funds may be used for any eligible activity under the Section 108 program including property acquisition, economic development, public facilities, or related activities.
Community Development Block Grants (CDBG). The CDBG program provides funds for revitalizing communities and redeveloping contaminated sites. The grants, which are allotted to cities, help ensure affordable housing, provide services to the most vulnerable in the communities, create jobs, and expand business opportunities.
CBDG resources can be used to finance the rehabilitation of privately owned buildings and sites and to cover specific costs related to labor, material, construction, or renovation.
To be eligible for CDBG funds, cities must prove that the brownfields redeveleopment meets at least on of HUD s national objectives:

- Benefit low and moderate income persons
- Prevent or eliminate slums or blight
- Address conditions that present urgent threats to the health and safety of a community

Section 108 Loan Guarantees . These guarantees allow local governments to finance economic and physical development, public facilities, and other large-scale brownfields redevelopment projects. Section 108 provides communities with a source of financing for economic development, housing rehabilitation, public facilities, and large-scale physical development projects. Activities funded by Section 108 must meet the same requirements as the CDBG program. Both CDBG and Section 108 are better suited for larger industrial sites and require city involvement. CDCs can request this grant money from their city.

"Piggybacking"

Depending on the site's location and planned used, many non-brownfields-specific funding sources can be brought to bear. For example, one of the most prominent brownfields in Lawrence, Massachusetts, is the mammoth Oxford Paper plant, located at the entrance or "gateway" to the city's historical district. In 1994, officials launched an initiative to redevelop the Oxford site that involved "piggy-backing" the project onto a nearby highway project, thus enabling the city to draw on Massachusetts Highway Departments funds. Plans call for demolition of existing Oxfor buildings, construction of road interchanges, and creation of a public park.

Source: Northeast Midwest Institute

Renewal Communities, Empowerment Zones, and Enterprise Communities. These are geographic areas targeted to receive special federal incentives in order to promote and build public-private partnerships. They offer significant economic incentives that can be used for brownfields clean-up and redevelopment.

U.S. Department of Commerce

The Economic Development Administration (EDA) has an Economic Development Information Clearinghouse that describes what EDA has done to promote brownfields redevelopment. Two EDA programs are of particular interest:

The EDA Local Technical Assistance Program could be used for predevelopment studies. It provides grants to organizations for research and organizational capacity building aimed at solving a particular problem and retaining/creating jobs.

The EDA Public Works and Development Facilities Program provides grants to help distressed communities attract new industry, expand business, diversify their economies, and attract private-sector jobs.

U.S. Treasury

Brownfields Tax Incentives. Created in partnership with the EPA, these incentives allow environmental clean-up costs to be fully deductible in the year they are incurred, rather than having to be capitalized. The government estimates that while the tax incentive costs approximately $300 million in annual tax revenue, it is expected to leverage $3.4 billion in private investment and return 8,000 brownfields to productive use.

State Financing Tools

State Financing

The Brownfields Center at Carnegie Mellon University provides links to states that offer direct financing for brownfileds redevelopment.

There are many different funds available for brownfields redevelopment at the state level. Not all states have such tools, but it is worth exploring. States also offer tax abatement or reduction, small business loans, and other incentives.

Here are some examples of state brownfields funding tools:

The California Environmental Redevelopment Fund (CERF) is a private, for-profit corporation that will finance the clean-up of contaminated sites across the state. CERF will provide a variety of lending products to businesses, developers, and public entities to facilitate the development of brownfield sites.California also has CalReUSE, a government-funded program that was put in place to promote the redevelopment of brownfields by providing access to forgivable loans that are meant to fund site assessment and remediation.

The Illinois Environmental Protection Agency Office of Brownfields Assistance lists the following Illinois programs: a $10 million Brownfields Redevelopment Loan Program for municipalities, a grant program also for municipalities, a $3.5 million brownfield clean-up revolving loan fund, and a bank participation loan program in Chicago for commercial or industrial loans.

The Governor's Office for Brownfields Revitalization in Massachusetts provides comprehensive assistance in accessing all brownfields and economic development programs and offers troubleshooting for government-related issues. Among Massachusetts's programs are the *Brownfields Redevelopment Fund*, which is run by MassDevelopment in partnership with the Brownfields Advisory Group and provides flexible financing for

site assessments and clean-up actions in economically distressed areas and *Brownfields Redevelopment Access to Capital (BRAC)*, a $15 million environmental insurance fund based on two state negotiated policies provided by AIG.

Government Incentives for Private Brownfields Financing

Community Reinvestment Act (CRA). The CRA requires lending institutions to make capital available for low- and moderate-income urban neighborhoods. In 1995, the EPA and the Office of the Comptroller of the Currency revised CRA regulations to allow brownfields projects in low- to moderate-income neighborhoods to qualify as part of meeting the CRA obligation.

Industrial Development Bonds (IDB). IDBs are private bonds issued to manufacturers for property acquisition, new plant construction, facility rehabilitation, and new equipment purchases. The tax-exempt bonds range from $1 million to $10 million. Federal IDBs cannot be used for brownfields cleanup costs, but some state laws do include brownfields remediation as an acceptable use for state bonds.

Rehabilitation Tax Credits (RTC). RTCs target sound, older structures; they allow a percentage of the tax credit to be taken from the total federal tax liability for the year when rehabilitation occurred. They can be used to redevelop brownfields properties that have an existing structure that is safe to keep, but requires some rehabilitation.

Land Donation. Many brownfields are located on land with little or no market value. Donation of this property is tax deductible, making it an attractive option for property owners who are no longer interested in ownership and cannot sell the land.

Policy

Since the inception of federal brownfields policy in 1995, the issue has received bipartisan attention. The federal law acted as a doorway and once the door was opened most states followed up with additional laws aimed at speeding up the reuse of contaminated and abandoned land.

Each state has taken a different path toward inspiring the reuse of brownfields. Some states have mandatory provisions, while others have voluntary programs. Several states have tried to clarify issues of liability. States such as New York and Michigan support redevelopment of brownfields through additional grants.

Most brownfields legislation seeks to achieve one or more of the following:

Clarify Liability Issues. As previously discussed, one of the key hurdles in redeveloping brownfields is fear of being held liable for owning or operating contaminated land. Several states have passed laws further clarifying the issues of liability and protecting prospective purchasers and developers from prosecution for previously existing contamination.

Inspire Owner Responsibility. Several states have put into place Voluntary Clean-up Programs, which provide brownfields landowners with the opportunity to clean up the land on their own to avoid the risk of prosecution. Other states have gone in the opposite direction, and have given their state Department of Environmental Protection the authority to clean-up brownfields and then charge negligent property owners with the costs if they do not feel compelled to remediate the land themselves.

Offer Financial Support. State and federal governments offer two forms of financial support with regard to brownfields remediation: grants to states, cities, and municipalities to either finance brownfields clean-up or to capitalize loan funds to do so, and grants for all interested developers. Some offer additional grants to developers who plan to provide some needed resource to low-income communities. Since most successful brownfields site remediation requires several different sources of financing, many states are also offering redevelopment loans.

Supply Free Resources. In an effort to lighten the burden of brownfields redevelopment, some states have developed programs to provide free environmental remediation services. For instance, a state might provide free legal services, help acquire the land, or provide technical assistance with environmental site assessment.

Provide Tax Incentives. Many bills offer tax incentives, such as tax credits or tax-exempt financing. These incentives lower the cost of brownfields redevelopment.
Following are some examples of specific brownfields legislation:

Federal

Small Business Liability Relief and Brownfields Revitalization Act 2002

This act expanded the Environmental Protection Agency's current brownfields program by authorizing funding for assessing and cleaning up contaminated properties. Approximately $250 million is available to eligible entities for site remediation through grants and loans. It also protects prospective purchasers and

contiguous property owners from superfund liability. Prospective purchasers are protected if they conduct a sufficient clean-up of the contaminated site in accordance with state and federal law.
Furthermore, people that own property adjacent to brownfields are not liable for the cost of clean-up if their property unknowingly became contaminated through no fault of their own. This act also provides exemption from superfund liability to businesses with less than 100 full-time employees existing for less than three years preceding the date of the first claim and to tax-exempt businesses. For more information visit read the full text of the act.

State

For an excellent summary of state programs and policies, please check with the Northeast-Midwest Institute (www.nemw.org). NEMW's *State of the State Annual Report* highlights each state's brownfields program including information on financing and attracting private investments.

California: *California Land Environmental Restoration and Reuse Act of 2001*

The major aim of SB32 was to expedite the process of remediating brownfields. This bill was produced as a result of a non-partisan coalition composed of public, private, for-profit, and not-for-profit interests. It gives local government authorities the power to order or directly undertake the investigation and clean-up of brownfields sites. It also grants statutory immunity to those performing a clean-up under the act. In addition, the bill requires the California EPA to develop screening standards for common contaminants by December 31, 2004.

Maryland: *Voluntary Clean-up Program (VCP) implemented in 1997*

This act was established to promote economic development, especially in distressed urban areas, by creating new job opportunities, expanding the existing tax base, utilizing the existing infrastructure, and preventing urban sprawl. In addition, the state provides free site assessment for publicly owned land and has placed limits on the liability of developers.
The state offers low-interest loans and grants for conducting environmental site assessments through the VCP. In addition, sites can receive a 70 percent reduction on their taxes for up to five years. Maryland's VCP program has helped remediate 38 brownfields, totaling 908 acres of land. This land has then been used to create 60 businesses, which employ 2,000 people.

Michigan: *Clean Michigan Initiative (CMI) of 1998*

CMI provides funding to local government authorities for the investigation and remediation of brownfields, which will be used for identified economic development projects. The initiative provides $255 million for brownfields clean-up, $60 million for sites with acute hazards, $20 million for sites with development potential for local government authorities, and $50 million for development of waterfront properties. A 10 percent business tax credit is also available for up to 10 years, not to exceed $1 million. In addition, urban communities have an opportunity to declare themselves an Obsolete Property Rehabilitation District, which enables them to offer 12 years of property tax abatement to businesses.

To date, 4,592 Baseline Environmental Assessments have been submitted and 214 brownfields grants and loans have been issued totaling $97.7 million. All this has generated approximately 13,000 jobs and $2.3 million in private investment.

Case Studies

Below are two examples of brownfields sites that have been remediated in a way that exemplifies equitable development. They both include a high level of community involvement and a positive outcome for the surrounding neighborhood. They are also winners of the prestigious Phoenix Awards, given since 1997 to outstanding brownfields remediation sites that have made a significant contribution to brownfields redevelopment and community reinvestment.

Huntington Industrial Center
Huntington, West Virginia

Huntington, West Virginia, was founded in the late 1800s. It began as a blue-collar railroad town, but with the decline of railroad use, many companies began relocating or going out of business. By the early 1960s, the town's population had steadily decreased.

In 1993, one of the last remaining large businesses, the Owens-Illinois Glass Plant, closed; 630 workers lost their jobs, increasing the unemployment rolls by a third. The community was devastated. In an attempt to take control of the situation a town meeting was held. More than 900 people attended to discuss ways to stem the community's loss of population and jobs. Over the next several months the townspeople completed a grassroots strategic plan guided by three general principles--economic opportunity, sustainable development, and community based partnerships-and focused on the reuse of the Owens-Illinois site.

The Huntington Municipal Development Authority, with the help of the local nonprofit Huntington Area Development Council, took title to the 42-acre former glass plant. The State of West Virginia designated the Huntington Industrial Center as its pilot brownfields test site. The environmental assessment revealed that the site was contaminated with arsenic, barium, and various petroleum products.
After the site was clean, the development authority created an industrial park: the Huntington Industrial Center. The project took three years to complete and cost $7.7 million.

The Huntington Industrial Center is the largest available manufacturing building in the State of West Virginia, and has been a revitalizing force for Huntington. In May 1997, the first tenant, SNE Enterprises, Inc., moved into the Industrial Center with a 10-year lease for 285,000 square feet. The company hoped to employ over 300 people by April 1999. That summer, the city was recognized in *Site Selection* magazine as one of the "Top 15 Hot Spots" for economic development. In September, a second tenant, Pure Tech Plastics, signed a 10-year lease for 150,000 square feet; it expected to provide 150 jobs. Since then, three additional businesses have moved into the center. Four out of the five businesses there are locally owned and the majority of the employees are residents of Huntington.
Today the City of Huntington supports a diverse population of approximately 52,000 residents. There is room for additional businesses at the Industrial Center, and the Huntington Area Development Council is aggressively marketing the site. There is a great deal of potential and hope for future development of the site.

The people of Huntington were involved in the development of the Huntington Industrial Center from

beginning to end. They identified a community need and took steps to rectify the problem themselves. The turnaround of the former glass plant and the opportunities it has provided show what community residents can achieve if they work together.

For Further Information Contact:
City of Huntington
PO Box 1659
Huntington WV 25717
Telephone (304) 696-5903
Fax (304) 696-4465

The Yards at Union Station
Portland, Oregon

The Yards at Union Station included rail yards and a passenger depot from 1896 until 1984, when a new facility was opened. In 1987, the Portland Development Commission purchased the abandoned station in hope of creating a high-density, mixed-use infill project near downtown. In 1995, Portland's Metro government adopted the 2040 Plan, which included ambitious affordable housing goals. The Yards site is located in the River District Urban Renewal Area, for which the 2040 plan sets a goal of 5,000 new units of housing,so the housing portion of the plan took on added significance.

In 1995, principal developers for the site had been selected through a competitive proposal process, financing had been arranged, and the design of the project was under way. During a geo-technical assessment of the site, however, crude oil was discovered in the soil, which led to an intense exploration of the site, which found that contamination was pervasive enough to require remediation. The discoverty lead to the loss of both the principal lender for the project and the general contractor and left the development team wondering whether houses could be built on the site.

In the months that followed, Oregon's Voluntary Clean-up Program conducted a thorough site assessment and feasibility study, which discovered arsenic, lead, and polynucleur aromatic hydrocarbons, along with the 3,000 square feet of crude oil.
The development team worked closely with the Oregon Department of Environmental Quality to devise a satisfactory clean-up plan that would also keep development costs feasible. They settled on a creative combination: the bulk of the soil containing crude oil was removed and the proposed community was redesigned so that the roadways and buildings would act asa cap, and a deed restriction was put in place to ensure the cap wouldn't be compromised by future development. The total remediation cost was $2.65 million, out of a total development cost of $57 million.

Development went forward. In March 1998, 158 units of housing were completed and 40 percent were reserved for households earning up to 60 percent of median income. The rest were sold at market value. In January 2000, another 321 apartments were finished. Half of these units were reserved for households earning less than 50 percent of median income, and half for those earning less than 60 percent. The station building itself was also renovated as a retail center, and a pedestrian bridge over the tracks connects the site to the rest of downtown.

The Yards at Union Station was part of the large River District renewal process, which won an award from 1000 Friends of Oregon in 2001 for its thorough and extensive citizen involvement process. The core of this process, the River District Steering Committee, was a citizen advocacy group composed of nonprofit representatives, community builders, and business leaders who met consistently for nearly 10 years.

The redevelopment of the Yards at Union Station made job, transportation, and accessible affordable housing available to low-income community members without contributing to urban sprawl. Most importantly, however, the redevelopment of this environmentally hazardous community eyesore provided renewed hope and community pride.

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Resources

Key Websites

Brownfields and Brownfields Redevelopment , Municipal Research and Services Center of Washington State
http://www.mrsc.org/environment/brownfields.htm

The **Brownfields Center at the Environmental Law Institute** provides essential information on brownfields clean-up and redevelopment, with a focus on the concerns and needs of community groups across the country.
http://www.brownfieldscenter.org/small/about.shtml

The **Brownfields Nonprofits Network** is a network of nonprofit organizations helping to promote brownfields redevelopment.
http://www.brownfieldsnet.org

The **Brownfields Technology Support Center** is coordinated by EPA's Technology Innovation Office, helps decision makers become aware of the full range of technologies available, so they can make informed technology decisions about their site.
http://www.brownfieldstsc.org/

Brownfields to Parks , The Trust for Public Land. The site includes information and resources on how to turn brownfields into gardens, parks, and open space.
http://www.tpl.org/tier2_rp2.cfm?content_item_id=0&folder_id=945

The **National Governors Association's Center for Best Practices** includes innovative state practices in brownfields redevelopment.
http://www.nga.org/center/topics/1,1188,D_374,00.html

On-line Brownfields Bibliography , California Center for Land Recycling (CCLR)
http://www.cclr.org/bibliog.html

Government Programs

The Maine Department of Environmental Protection, Voluntary Response Action Program, www.state.me.us/dep/rwm/rem/brown.htm

The Maryland Department of Environmental Protection, Maryland's Voluntary Clean-up Program, www.mde.state.md.us/environment/was/brownfields/index.html

The New York Department of Environmental Protection, Clean Water/Clean Air Act of 1996, www.dec.state.ny.us/website/der/bfield/index.html

The Pennsylvania Department of Environmental Protection, Hazardous Sites Clean-up Program, www.dep.state.pa.us/dep/deputate/airwaste/wm/Hscp/hscahome.htm

The Phoenix Awards. The Phoenix Awards were created in 1997 to honor groups that develop significant brownfields sites across the country. They seek to recognize innovative yet practical remediation projects,

which bring blighted, old commercial and industrial sites back to productive use. www.dep.state.pa.us/hosting/phoenixawards/History/History.htm

U.S. Environmental Protection Agency, Brownfields Economic Redevelopment Initiative, www.epa.gov/brownfields

U.S. Department of Commerce, Economic Development Administration, www.osec.doc.gov/eda/html/2b4_3_brownfields.htm

U.S. Department of Housing and Urban Development, Brownfields Economic Development Initiative, www.hud.gov/offices/cpd/economicdevelopment/programs/bedi/index.cfm

Organizations

California Center for Land Recycling
www.cclr.org

California Environmental Redevelopment Fund (CERF)
www.ca-cerf.com

Conservation Law Foundation
www.clf.org

The Greenlining Institute
www.greenlining.org

The Institute for Responsible Management, Inc.
www.instrm.org

International City/County Management Association (ICMA)
www2.icma.org/content/topic.asp?tpid=19

National Brownfields Association
www.brownfieldassociation.org

Northeast Midwest Institute
www.nemw.org/brownfields.htm

Phoenix Land Recycling Company
www.phoenixland.org

U.S. Conference of Mayors Brownfields Page
www.usmayors.org/uscm/brownfields

The Brownfields Center, Carnegie Mellon University
www.ce.cmu.edu/Brownfields

National Center for Neighborhood and Brownfields Redevelopment, Rutgers University
policy.rutgers.edu/brownfields

Readings

Environmental Justice, Urban Revitalization, and Brownfields: The Search for Authentic Signs of Hope. A Report on the"Public Dialogues on Urban Revitalization and Brownfields:Envisioning Healthy and Sustainable

Communities," National Environmental Justice Advisory Council (NEJAC) Waste and Facility Siting Subcommittee.

Financing Brownfield Clean-up and Redevelopment. Charles Bartsch, Northeast Midwest Institute.

"Brownfields to Greenfields? The Jury Is Still Out." *Everyone's Backyard,* Center for Health and Environmental Justice, Fall 1995.

"Reclaiming Land and Community: Brownfields & Environmental Justice," *Race, Poverty & the Environment: A Journal for Social and Environmental Justice* , 2001.

Promoting More Equitable Brownfield Redevelopment: Promising Approaches for Land Banks and Other Community Land Development Entities , Nancy Green Leigh. Lincoln Institute of Land Policy working paper, 2000.

Reclamation and Economic Regeneration of Brownfields, Peter B. Meyer and H. Wade Van Landingham, The E.P. Systems Group, Inc. U.S. Economic Development Administration, 2000.

Working on Brownfields: The Employment and Training Connection, Paula Duggan. Northeast-Midwest Institute,1998.

Strategies for Promoting Brownfield Reuse in California -- A Blueprint for Policy Reform . Edith Pepper. Policy Paper, Series 2. California Center for Land Recycling, 1998.

The Brownfields Book . Published by Jenner & Block (Chicago, IL) and Roy F. Weston (Vernon Hills, IL). 1997.

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Community Brownfield Guidebook: Assessing and Resolving Environmental Barriers to Redevelopment . Nancy Green Leigh and Rhonda Hise. Georgia Tech Research Corporation ,1997.

Lessons from the Field: Unlocking Economic Potential with an Environmental Key . Pepper, Edith. The Northeast-Midwest Institute, 1997.

"Leveling the Playing Field," *Shelterforce,* March/April 1998.

Coming Clean for Economic Development: A Resource Book on Environmental Clean-up and Economic Development Opportunities , Charles Bartsch, Elizabeth Collaton, and Edith Pepper. Northeast Midwest Institute, 1996.