

Anatomy of Brownfields Redevelopment



Brownfields Solutions Series



A *brownfield* is a property on which expansion, redevelopment, or reuse may be complicated by the presence, or perceived presence, of contamination. EPA's Brownfields Program provides grants to fund environmental assessment, cleanup, and job training activities. Additionally, EPA seeks to strengthen the marketplace and encourages stakeholders to leverage the resources needed to clean up and redevelop brownfields.

This *Brownfields Solutions Series* fact sheet is intended to provide an overview of the brownfields redevelopment process. The brownfields real estate redevelopment process, along with key challenges, critical participants, and example redevelopment scenarios are discussed. Key real estate terms are highlighted in bold text. These terms are explained on page 7. The information in this fact sheet is based on stakeholders' experiences in the brownfields cleanup and redevelopment process and does not represent the views of EPA.

Key Challenges in Brownfields Redevelopment

Several challenges make brownfields cleanup and redevelopment unique compared to other real estate development projects. These challenges include:

- **Environmental Liability**
Concerns: Developers and property owners want to manage past and future liabilities associated with the property's environmental history.
- **Financial Barriers:** Private lenders are often reluctant to give loans for potentially impaired lands. In some cases, cleanup costs for a property may ultimately be more than the property's value.

- **Cleanup Considerations:**
A brownfields redevelopment timeline may take longer than typical real estate development due to environmental assessment and cleanup activities.
- **Reuse Planning:** A reuse plan based on community goals or sound economic and environmental information (e.g., market potential) may be lacking.

In spite of these challenges, significant opportunities exist for successful brownfields redevelopment. A redevelopment idea that works to bring new life to an area, enhanced by public support for the project, can create the momentum necessary to overcome the challenges associated with brownfields transactions.

Critical Participants in a Brownfields Transaction and Redevelopment Effort

Property owners, public- and private-sector stakeholders, and other parties (e.g., attorneys, regulators) have roles and interests in brownfields cleanup and redevelopment efforts. There is no specific point in the brownfields project that these participants must be identified and involved, but the more participants involved in the upfront planning, the smoother the project planning process. Included on the following page is a table that summarizes the roles each participant plays in a brownfields transaction and their interest in a successful transaction.

The Real Estate Development Process

Brownfields redevelopment often relies on strong coordination among stakeholders including local communities; local, state, and federal governments; private parties; and nonprofit organizations. Successful development of brownfields can be enabled or accelerated when these stakeholders work together to assess and clean up the property and pursue a common redevelopment goal.

Roles and Interests of Participants

Participants	Examples	Role	Interest
Property Owner		Sell or develop the property	- Want to receive a fair value of their property depending on the extent of environmental contamination - Want to manage any liability concerns upfront
Public-Sector Stakeholders	- Local Governments - Community Groups - EPA Grant Recipients - Nonprofit Organizations	Redevelop the property from a community and economic development perspective	- Want to see the project succeed in terms of revitalizing blighted properties and generating economic or community growth - May want the successful property assessment, cleanup, and reuse to enhance the community's image
Private-Sector Stakeholders	- Investors - Lenders - Developers - Insurers	Provide resources to develop the property	- Want to see the project succeed in terms of revitalizing blighted properties and generating economic or community growth - Want to earn an appropriate return on investment - May want to tie the property redevelopment into a larger redevelopment plan for the neighborhood or community
Other Parties	- Attorneys - Environmental Consultants - State and Federal Regulators	Provide technical, regulatory, or other guidance	- Want to ensure that the property is cleaned up and safe for appropriate levels of use and/or reuse - Want to alleviate future environmental concerns on the property

Typical Steps in the Redevelopment Process

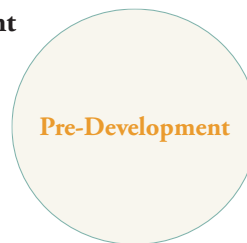


The redevelopment process generally follows four steps: 1) Pre-development; 2) Securing the Deal; 3) Cleanup and Development; and 4) Property Management. Within each of these steps, there are multiple activities that may occur, and the order of these activities may vary. As brownfields redevelopment projects vary greatly in their complexities and scope, a greater emphasis will be placed on different parts of the process depending on which type of redevelopment scenario occurs. Brownfields redevelopment typically follows one of three scenarios: private-led, public-private partnership, or public-led. These three scenarios are discussed on page 5.

Pre-Development

Pre-Development

activities lay the foundation for a successful brownfields redevelopment project by identifying and refining the redevelopment idea; conducting due diligence to assess the extent of contamination at the property; identifying potential funding sources; and resolving numerous other issues related to the property's redevelopment. The pre-development activities are an iterative rather than a linear process.



Identify and Refine a Redevelopment Idea. To begin the pre-development process, a developer may reexamine a development idea several times before the project makes sense, from both a financial and environmental standpoint. In a private-led redevelopment scenario, the developer typically generates and refines the redevelopment idea, while in the public-led redevelopment scenario, the community input drives the redevelopment idea. In identifying a redevelopment idea, one of the first steps in the brownfields redevelopment process is to identify and assess potential reuses for the property. Early determination of the property's reuse will ensure that cleanup

efforts complement the reuse goal and that stakeholders are invested in the redevelopment process. All critical stakeholders should be assembled to facilitate communication and elicit support for the project. Input gathered through stakeholder meetings can be used to conduct a reuse planning effort to evaluate historic use patterns; examine existing planning and zoning; and refine potential redevelopment ideas.

Conduct Due Diligence. Due diligence involves a variety of activities in advance of purchasing a property as well as activities specific to the environmental components of the redevelopment. These activities typically include conducting property and environmental assessments, researching land and building titles for the property, and continuing communications with key stakeholders about the planned redevelopment. When reviewing property reuse assessments, the assessments typically consider the **highest and best use** of a property, environmental factors, available financial tools, and local stakeholder concerns. The highest and best use from a developer's perspective may vary from what the community considers the best use of the property. Potential contamination on the property may present obstacles to the developer's highest and best use for the property. The project developer or EPA grant recipient may also prepare a **market analysis** or feasibility study to evaluate local and regional economic and real estate conditions and characterize the market demand for various **real estate products**. During the due diligence process, a project developer will also likely conduct a **pro forma** analysis to determine the economic viability of the development.

Identifying the presence and extent of contamination is essential to evaluating risk, limiting liability, and determining an appropriate reuse. If not already done, a **Phase I environmental**

assessment should be performed to identify the presence, type, and extent of contamination that may exist onsite. If required, a Phase II assessment may be conducted to sample or test for specific hazards that may have been identified in Phase I and to help develop a **remedial action plan**.

Secure Access to the Property. Access to the property must be secured from the property owner before beginning assessment activities. A plan for obtaining property control or property ownership should be identified if the property owner is not an active participant in the redevelopment process.

Identify Sources of Financing. A combination of private- and public-sector funding may be used to finance assessment, remediation, purchase, and redevelopment activities. These funding sources may include: local, state, and federal government programs that offer **tax credits, tax abatements, TIF districts**, grants, subsidies, bonds, or loans; property owners; developers; investors; and nonprofit organizations. Municipal economic development agencies and/or state brownfields programs are likely sources of information for brownfields redevelopment financing.

Securing the Deal

Securing the Deal can begin once the pre-development step has yielded a decision to purchase the property and continue with the project. In order to secure the deal, contract terms must be negotiated, financing secured, and a decision must be made on how to manage the environmental liability. Once all of these steps are satisfied, a formal commitment is made to move forward.



Contract Negotiation. A brownfields project may have complications that must be resolved between the buyer and seller that stem from environmental concerns. During the contract negotiation, a term sheet is often used to sort out what responsibilities the buyer and seller will each take in the property transfer. For example, if the property has existing buildings that will be reused, this may include normal property and building costs like repairing roofs or HVAC systems. Negotiations also include determining where the responsibility for remediation lies and who will manage the liability once the redevelopment is completed. Other issues requiring negotiation include establishing liability for various aspects of the cleanup including on-site vs. off-site concerns and agreeing on long-term responsibility for the maintenance of the remediation and institutional controls, if applicable.

Secure Financing. One of the developer's roles is to provide financing to develop the property. To ensure that cleanup and redevelopment are not hindered by a lack of funding, all public and private funding sources (e.g., grants, loans) identified in the pre-development step should be secured. If necessary, a nonprofit, trust, or other fund may be established to receive and distribute this funding. In many instances, **debt financing** is utilized, where loans are secured through a financial institution for the redevelopment. Private investors may also back developers through **equity financing**. Public financing may be utilized for many components of the redevelopment, including building demolition, infrastructure development, and cleanup activities.

Establish A Remedial Action Plan. In brownfields redevelopment, it is difficult for a property to transfer owners if the remediation costs are not quantified. Therefore in most situations a property is completely characterized and a remedial action plan is put in

place. This process can either be done by the buyer or the seller.

Securing the Property and Formal Commitment. If the property is not owned by the entity performing cleanup and redevelopment, it may be obtained through a purchase or sale agreement, or involuntary acquisition methods such as foreclosure. During the formal commitment, contracts and documents are signed and exchanged. Once obtained, any zoning changes or variances that may be required for the planned reuse should be pursued (e.g., changing the property's zoning from industrial to commercial).

Cleanup and Development

Cleanup and Development

occurs once the planning processes have been completed. This step encompasses receiving construction approvals; conducting cleanup and construction; integrating cleanup and construction activities; and completing the redevelopment signified by the property's sale or lease, including securing tenants.

Approvals. Prior to construction, all land use and construction approvals are necessary. In order to receive approvals, specifications of the buildings and site plans have been approved and permits have been secured.

Cleanup. Property cleanup is conducted based on the remedial action plan. Depending on the type, quantity, and toxicity of contamination found onsite, cleanup activities may include soil, surface water, or ground water remediation. If an entity that did not contribute to the contamination is

performing the remediation, it may do so through a state voluntary cleanup program, which may limit liability associated with any residual or newly-discovered contamination after cleanup. A cleanup may be considered complete when local, state, or federal regulatory closure (e.g., a No Further Action Letter) is issued.

Integrate Cleanup and Construction. Based on assessment activities, planned cleanup actions, and stakeholder input, developers are typically able to integrate cleanup and construction activities. Engineers for cleanup and construction activities have developed detailed plans for streamlining the process and ensuring all issues are resolved so that the redevelopment process runs smoothly. This portion of the redevelopment process is extremely time-sensitive as construction delays may cause overall increases in redevelopment costs.

Property Sale or Lease. Leasing begins when the construction schedule is determined. After construction is complete, the property may or may not be sold. A commercial property may be sold or leased for long-term management. However, in most cases the property is leased first.

Completion and Formal Opening. A brownfields project may be considered successfully redeveloped after construction is complete, ownership and leasing transactions are finalized, and the property is occupied and operating as its planned reuse. If the property is a large-scale redevelopment, the formal opening may be signified by an event in which brokers, neighbors, and elected officials are invited to view the completed property and celebrate the completion of the construction phase of the project.

Property Management

Property Management of a brownfield may continue after redevelopment is considered complete.

Management involves a number of tasks to ensure the long-term sustainable reuse of the property. This includes managing the financial aspects, physical plant, community relations, and any long-term environmental issues associated with the property.

Long-term Operations and Maintenance of Remedial Systems.

Some remedial methods, such as ground water pump and treat systems, require long-term operation and maintenance. In these instances, the property owner may be responsible for submitting monitoring reports to the agency with regulatory oversight on a periodic schedule. In addition, many brownfield properties incorporate engineering and **institutional controls** in their remedial plans to restrict property access or use. Engineering controls such as asphalt caps and fencing should be inspected on a regular basis to ensure they remain protective of human health and the environment. Institutional controls often take the form of deed restrictions or easements; property owners must maintain awareness of these restrictions and ensure they transfer to the new owner if the property is sold.



Property Management



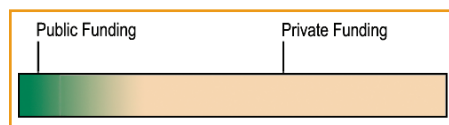
Cleanup and Development

Redevelopment Scenarios

Brownfields redevelopment often involves many participants, including public- and private-sector partners. For brownfields projects that utilize EPA Brownfield grants, the levels and combinations of public/private funding vary from project to project. The public and private stakeholders involved, and necessary steps, can vary widely among brownfields projects.

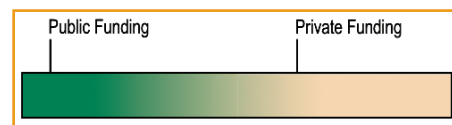
The following redevelopment scenarios represent three common examples of brownfield transactions: private, public-private, and public.

Private Redevelopment



In a typical, privately driven redevelopment scenario, a developer takes responsibility for the entire redevelopment process but may require some limited public investment to first define the extent of contamination onsite. The first step is for the developer to take title of the land via purchase or conveyance, and plan for the property's reuse. Given the developer's financial resources, private financing will need to be identified either through debt or equity. Public funding, such as an EPA Brownfields Assessment grant might be used to identify and quantify the property's contamination and define the environmental cleanup required. The developer completes all environmental cleanup activities, meeting the state's voluntary cleanup program requirements and other applicable federal or state regulations. Once cleanup is considered complete by the appropriate regulatory authority, the property may be redeveloped.

Public-Private Redevelopment



A public-private partnership is an agreement between at least one public-sector entity and one private-sector organization to combine resources and efforts to accomplish a common goal. The level of participation can vary from all public to nearly all private. In typical public-private partnerships associated with brownfields restoration, the public entity usually sponsors the project and provides some initial funding, often for assessments that remove contamination uncertainties and for infrastructure to support development; a private-sector developer then funds and manages the pre-development and construction process.

The composition of the public-private partnership is unique for each brownfields project. Public-private partnerships are often successful because initial public investments provide the necessary incentives for private-sector development and operation. These collaborations reduce the financial burden on the public sector while accelerating property cleanup, redevelopment, and community revitalization.

Private-led Redevelopment: Emeryville, California

Located between Oakland and Berkeley, California, the City of Emeryville saw most of its supporting industry abandon the area during the 1970s. By the mid-1990s, more than 230 acres within Emeryville were underused or altogether vacant, with more than 90 percent of this idle land known to have soil and ground water contamination. To aid in the city's assessment, cleanup, and redevelopment efforts for these tainted properties, EPA awarded Emeryville a \$200,000 Brownfields Assessment grant in March 1996. EPA and the city worked together to target ten area brownfields deemed ripe for redevelopment. In addition to performing assessments, Emeryville used EPA grant funds to develop a database on the areas brownfields—a "One Stop Shop" for potential investors and developers to learn about assessment results, land use and zoning issues, property ownership status, and other essential facts about city properties targeted for reuse. On one of Emeryville's brownfields, a private corporation purchased the property and constructed 200 units of mixed-income housing. Another brownfield was purchased by one of the country's largest biotechnology firms for its new headquarters—with planned construction of 12 buildings totaling more than two million square feet. Since EPA's Brownfields grant, the City of Emeryville has leveraged more than \$640 million in cleanup and redevelopment funding from the private sector, for projects ultimately expected to provide more than 10,000 new jobs and produce four million square feet of new office, commercial, and residential space.



Public-led Redevelopment



For some brownfields, a public sector-led development process may return the property to productive use. In a typical public redevelopment scenario, a municipality takes responsibility for the entire assessment and cleanup process. The municipality may then “flip” the

property to a developer, or redevelop the property itself for public use.

In such scenarios, the municipality typically takes ownership of the property by foreclosure, eminent domain, or voluntary purchase. The municipality then conducts environmental assessment and cleanup activities, which may be funded using EPA Brownfields Assessment or Cleanup grants, state grant programs, or local funding. Once remediated,

the property may be transferred to the local economic development authority to prepare the property for construction. The property might be sold to a developer at this stage, or the municipality might construct speculative buildings that could later be leased or included in the property’s sale. A municipality may also elect to maintain a property after cleanup is complete, using the property for a public need such as a park, school, or other municipal building.

Public-Private Redevelopment: St. Louis Park, Minnesota

In St. Louis Park, Minnesota, the vacant, 5.8-acre property of a former lithium processing facility had long meant trouble for the nearby community. Located near a public park and an elementary school, the property attracted vagrants and drug activity, and had been the subject of 45 police calls within five years. When a private developer purchased the property, initial assessments revealed lithium-impacted soils to a depth of 16 feet, as well as petroleum, lead, and barium contamination. An EPA Brownfields Cleanup Revolving Loan Fund awarded to Hennepin County, Minnesota, and a partnership between Hennepin County and the Minnesota Department of Employment and Economic Development (DEED) helped to cover the critical financing required for this \$2.3 million cleanup effort. In return, the developer financed a \$4.6 million redevelopment effort that transformed the property into a 79,000 square foot, multi-tenant modern office building less than a year after cleanup began. In preparing the property for redevelopment, more than 20 thousand pounds of pure lithium and other contaminants were removed from the property’s soil and ground water. Assessed value of the property went from \$1.7 million to \$5.2 million, and the property’s tax revenues for the city increased by 350 percent. Before redevelopment was even complete, nearly 80 percent of the office facility had been leased by a promotional manufacturing and distribution firm that brought 100 jobs to the community. The private developer received the Twin Cities Business Journal’s “Best in Real Estate Award” in the Redevelopment Category for 2003, and the National Association of Industrial and Office Professionals’ “Award of Excellence” in the Multi-Tenant Industrial Building category in 2005.



Public-led Redevelopment: Prineville City Hall and Community Plaza, Prineville, Oregon

The City of Prineville, Oregon, faced a need for space to accommodate services including administration, planning and community development, police and emergency dispatch, and child/family assistance. A .25-acre, former gas station property was identified as a potential property for these uses. The gas station had operated from 1940 until 1997, and an environmental assessment revealed severe petroleum contamination. A \$200,000 EPA Brownfields Petroleum Cleanup grant awarded to the city in 2003 was used to address the property’s soil and ground water petroleum contamination and minimize the migration of vapors. In order to complete this project, the city contributed its own funding, and leveraged funding from sources including Crook County, an Oregon Housing and Community Services Department Community INVESTMENT grant, an Oregon Economic Community Development Department Flood Recovery and Restoration grant (for park development), a U.S. Department of Agriculture Forest Service Community Assistance Planning grant (for design costs), an Oregon Department of Transportation Local Street Network grant (for road updates), and a U.S. Department of Agriculture Rural Development loan (for construction). Cleanup was completed in June 2004, and Prineville’s new City Hall and Community Plaza opened in July 2005.



Key Terms and Resources

Included below are definitions of important terms that may be used in brownfields redevelopment projects.

- **Debt Financing:** Project financing that comes from obtaining loans and/or issuing bonds.
- **Due Diligence:** Refers to the research or analysis that takes place in advance of purchasing a property.
- **Equity Financing:** Project financing that comes primarily from private investors investing in a project in exchange for an ownership stake.
- **Highest and Best Use:** The redevelopment use of the property that will result in the maximum market value for the property.
- **Institutional Controls:** Actions, such as legal controls, which help minimize the potential for human exposure to contamination by ensuring appropriate land or resource use.
- **Market Analysis:** Investigating and reviewing local and regional real estate market conditions, economic conditions, and supply and demand data for a potential redevelopment.
- **Phase I Assessment:** Investigation performed by an environmental professional that typically involves property surveys, interviews with owners and local government, and reviews of historical records to determine the potential for contamination on the property.
- **Pro Forma:** A modeling of the projected cash flows of a potential redevelopment.
- **Real Estate Products:** The various types of real estate developments for different market segments (e.g., residential, commercial, industrial).
- **Remedial Action Plan:** A long-term plan that details the cleanup plans for a property.
- **State Voluntary Cleanup Programs (VCPs):** State VCPs can bring a final authority to the cleanup process via liability relief and No Further Action letters. A copy of the 2005 State Brownfields and Voluntary Response Programs Guide can be downloaded at: http://www.epa.gov/brownfields/pubs/st_res_prog_report.htm.
- **Tax Abatements:** Cities or counties may agree to reduce taxes owed or exempt property owners from paying property taxes for a period of time in order to spur economic development.
- **Tax Credits:** A tax credit lowers the amount of income tax owed by a tax payer.
- **Tax Increment Financing (TIF) Districts:** Cities create TIF Districts to make public improvements within those districts that will generate private-sector development. In these districts, the current tax rate is frozen while area improvements or development occur. Tax increases in property assessment values after redevelopment go into a special bond fund or are used for future growth in the district.

Resources:

The 2005 Brownfields Federal Programs Guide

Developed by EPA's Office of Brownfields Cleanup and Redevelopment (OBCR), this Guide offers information on a range of federal resources that can provide technical and financial support to brownfields cleanup and redevelopment. The Guide also includes a quick reference matrix that connects specific types of projects with specific funding sources. The Guide can be downloaded from the OBCR Web site at: http://www.epa.gov/brownfields/partners/bf_fed_pr_gd.htm.

EPA's Environmental Insurance and Brownfields Redevelopment Web Site

The OBCR Web site provides links to many resources to encourage private-sector involvement, and includes detailed information on environmental insurance, policy coverage, and key terms. This information can be found at: <http://www.epa.gov/brownfields/insurebf.htm#about>.

New Markets Tax Credit Program

The OBCR Web site provides a link to the New Markets Tax Credit Brownfields Solutions Series. This fact sheet discusses how the program can be used as a financing mechanism in brownfields cleanup and redevelopment. The PDF can be found at: <http://www.epa.gov/brownfields/matters.htm#relate>.