Guide to Leveraging Brownfield Redevelopment for Community Revitalization

Building Capacity in Washington State

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Purpose

Washington State communities, like thousands of communities across the nation, are plagued by underutilized and blighted properties that are encumbered by real or perceived environmental contamination. These properties, or sites, are known as "brownfields." Redevelopment of these sites can transform these liabilities into community assets that create jobs and tax revenues, eliminate blight, protect the environment and human health, and prevent urban sprawl.

Most of these properties do not make newspaper headlines. They are often small properties with low levels of environmental contamination. These properties have the potential to be economically successful and can be greatly assisted by local interest and effort.

- It is estimated that there are over a million of these opportunities nationwide. A survey of cities across the United States reports an average of 134 sites per community and as many as 20,000 sites per state. Most of the sites are smaller properties, with an average size of 6.5 acres.[1]
- The Washington State Department of Ecology estimates that, in this state alone, there are over 1,000 known, publicly owned sites that require remediation. Over half of these sites have an estimated cleanup cost of less than $2 million.[2]

This guide provides critical information for local government agencies and nongovernmental organizations interested in building community capacity to promote informed decision-making and actions to clean up and redevelop these brownfield sites. Transitioning these properties from liabilities to community assets is a complex undertaking requiring well-thought-out strategies that recognize risk, cost, and opportunity. Each brownfield is unique, but all share common considerations. This guide explores those considerations and offers a path forward for organizations and individuals that are pursuing this community and economic development goal.

[1] U.S. Conference of Mayors, Recycling America's Land, A National Report on Brownfields Redevelopment, January 2008.

[2] Washington State Department of Ecology. Model Toxics Act Remedial Action Grants: Alternative Financing Evaluation. January 2010.

How to Use This Guide

This guidebook is designed for local leaders and proponents of community revitalization. It provides a big-picture view of the entire process of cleanup and redevelopment of contaminated properties. As you undertake a redevelopment project, you will find yourself leading a team of experts from a variety of disciplines. Your role will be to maintain a focus on the end goal of cleanup and revitalization and drive the process forward. Many detailed and technical issues are involved in toxics cleanup and property development. This guidebook presents the major topics and provides key questions to address your specific brownfield project.

The document is organized into four sections with two appendices:

1. Introduction—This section provides background information, context, and high-level strategies for successful redevelopment projects.

2. Key Players—This section introduces the broad network of public agencies, community stakeholders, private developers, and service providers that you may need to engage to achieve your redevelopment goals.

3. Cleanup and Redevelopment Process—The objective of this section is to provide a high-level understanding of the integrated process of cleanup and redevelopment for the project manager and local leadership perspective. The Brownfield Cleanup and Redevelopment Process diagram provides a roadmap that connects the numerous tasks and shows how they lead to a completed project.

4. Managing Risk—Risk is an overarching topic that crosses both environmental issues and investment in property development. This section describes an approach for developing an integrated strategy to manage risk.

Appendix A—Funding Sources. Funding is always a critical issue for a redevelopment project. This appendix section provides an easy-to-use table of potential funding sources for both cleanup and redevelopment of a property.

Appendix B—Recommended Resources. Reference materials available for more information on key topics.

Appendix C—Recommended Resources. Reference materials available for more information on key topics.

Step By Step Guidance

The cleanup and redevelopment process is a dynamic and iterative, rather than linear process. Brownfield projects usually have multiple elements moving forward at the same time that need to be coordinated. The text of the guide and the Brownfield Cleanup and Redevelopment Diagram describe 15 major milestones.

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Acronyms and Abbreviations

AAI	all appropriate inquiry(ies)
CDBG	Community Development Block Grant
CERB	Community Economic Revitalization Board
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (also referred to as Superfund Law)
Commerce	Washington State Department of Commerce
Ecology	Washington State Department of Ecology
EIL	Environmental Impairment Liability
ESA	environmental site assessment
FS	Feasibility Study
LIFT	Local Infrastructure Financing Tool
LRF	Local Revitalization Financing
MTCA	Model Toxics Control Act
NFA	No Further Action
PDA	public development authority
RCW	Revised Code of Washington
RDA	revenue development area
RI	Remedial Investigation
SVOC	semivolatile organic compound
TIF	tax increment financing
USEPA	U.S. Environmental Protection Agency
VCP	Voluntary Cleanup Program
VOC	volatile organic compound
WAC	Washington Administrative Code

1 Introduction

1.1 - Community Revitalization and Brownfields

Communities across Washington State are looking for ways to adapt to economic and cultural changes and help our cities and towns thrive. In recent decades, our populations and development have expanded into suburban areas, turning many downtown districts into shadows of their past. Today, social and economic trends and the state's Growth Management Act are reversing that trend and leading to increased efforts to revitalize our towns and cities.

The move back to cities and towns requires getting them ready for the 21st century. "Adaptive reuse" is the process of renovating and redeveloping existing buildings and properties for new activities. As communities seek to adaptively reuse properties in developed areas, the issue of contamination from previous activities can arise. Properties where real or perceived environmental contamination hinders redevelopment goals are called "brownfields."

The economy of the Pacific Northwest is shifting from traditional industries based predominantly on natural resource extraction to new sectors including technology, tourism, financial, and health services. Historical industries and waste management practices have left a legacy of contamination in our state's soil and groundwater. The potential risks to public health and the environment from contaminated properties complicate their redevelopment for new uses. The cleanup and redevelopment of brownfields is an important component of repositioning our communities and our economies to address legacy issues and take advantage of new opportunities.

Brownfields often pose a real obstacle to progress for economic development in small towns and large cities alike. This guidebook is designed to help communities develop approaches to turn these apparent liabilities into assets that can be leveraged to meet revitalization goals.

1.1.1 The Impacts of Brownfields on Communities

The impacts of brownfields can extend beyond the boundaries of the property to affect the surrounding community and environment. Left in their current state, these properties can:

- Harm human health and the environment
- Become eyesores and contribute to blight
- Limit economic growth and development
- Reduce employment opportunities and tax revenue
- Reduce surrounding property values
- Contribute to neighborhood crime

People often think of contaminated properties as large factories in big cities, but most sites are small properties such as former gas stations, repair shops, and dry cleaners. In smaller communities the impact of these sites can be disproportionately large.

1.1.2 The Benefits of Cleanup and Redevelopment of Brownfields

The cleanup and redevelopment of a brownfield can stimulate a community's economy, provide an opportunity for habitat restoration, and create public space. It can set the stage for business development and address community needs. Cleanup and redevelopment of brownfields can be an effective economic development strategy. The economic benefits are realized in two ways. First is in the immediate and one-time capital spending for cleanup activities, infrastructure, and vertical construction. This initial investment generates tax revenues, family-wage jobs, and indirect economic spin-offs within the community. Second is in the long-term economic lift a project can bring in the form of higher property values, long-term tax revenues, and indirect spending stimulated by a revitalized property. The economic lift is further sustained by permanent job creation on the restored properties.

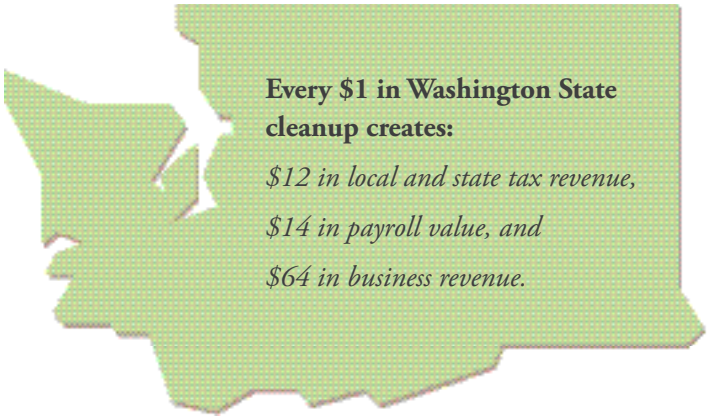
Common brownfield sites in Washington include properties formerly used as:

Gas stations	Landfills	Pulp & paper mills
Auto repair shops	Manufacturing sites	Wood-treating facilities
Dry cleaners		

Cleanup and redevelopment of brownfields can create a number of other community benefits:

- Protection of human health and the environment
- Efficient use of existing utilities and infrastructure
- Revitalization of neighborhoods
- Educational opportunities
- Building of community through public participation

The ultimate reuse of brownfield sites varies considerably, based on local economic and market conditions, community goals, and desires of property owners. Nationwide, the most common redevelopment uses are retail, housing, and open space (see Figure 1-1).



Source: Washington State Department of Ecology. Model Toxics Act Remedial Action Grants: Alternative Financing Evaluation. January 2010.

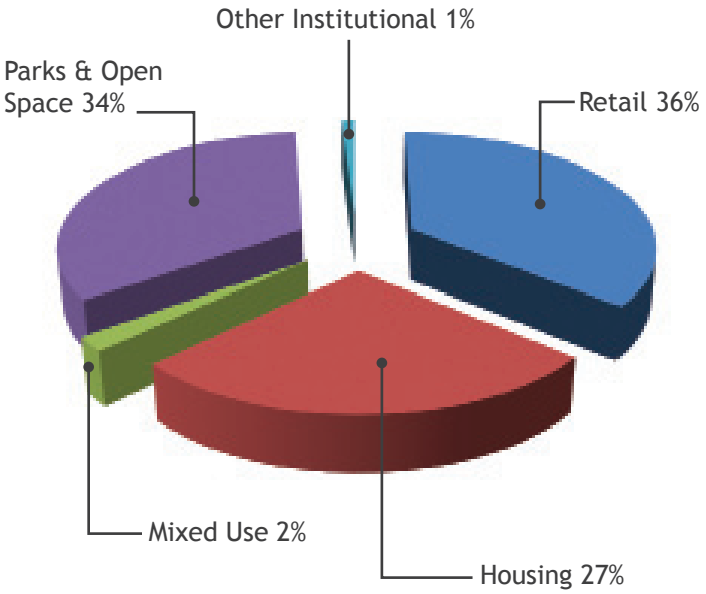
1.2 - The Third-Generation Brownfield Project

The practice of redeveloping brownfields has evolved to address a range of environmental, economic, and community factors. The first generation of brownfield programs arose with the passage of the federal Superfund Law and similar state statutes in the 1980s. This approach focused on cleanup and the allocation of risk. This often resulted in confusion in the real estate and development markets and, in many cases, exacerbated the negative market view of brownfield properties. Despite the best intentions of regulators and the desires of owners to develop their property, lenders and prospective developers were often dissuaded from investing in these sites by fears of liability and uncertainty.

The second-generation approach to brownfields emerged as regulators and property owners recognized the economic benefits of cleanup and adaptive reuse of a property. This resulted in regulatory reforms in the 1990s and early 2000s, including voluntary cleanup programs specifically designed to promote redevelopment and limit liability of innocent purchasers and lenders.

The emerging third-generation approach to brownfield cleanup and redevelopment integrates environmental cleanup and economic revitalization with community development. The synergy of environmental, economic, and community benefits differentiates a third-generation brownfield effort from earlier cleanup projects. This model aligns with the triple-bottom line approach to sustainable development that evaluates projects' economic, environmental and social impacts.

Figure 1-1.
Redevelopment Uses of Brownfield Sites[3]



[3] U.S. Conference of Mayors, Recycling America's Land, A National Report on Brownfields Redevelopment, January 2008.

The added emphasis on community development in brownfield projects often involves building partnerships with state and federal government agencies, nongovernmental organizations (e.g., land trusts), community groups, educational institutions, and concerned citizens. These collaborations facilitate the development of public open space; historic and cultural preservation; learning opportunities; and an economic and land-use paradigm based on the intrinsic values of a community. This approach helps to create vital and successful communities that embrace the values and assets created by previous generations, while at the same time transitioning local economies to thrive in the 21st century.

1.3 - Barriers to Brownfield Redevelopment

The two primary challenges to the cleanup and redevelopment of brownfield properties are cost and liability concerns, both of which contribute to risk and uncertainty. The cost of environmental cleanup adds to typical real estate development planning, entitlement, and construction costs. The legal and procedural steps necessary to investigate, clean, acquire, and reuse contaminated sites can be expensive and time-consuming. In practice, whether or not sites are cleaned and reused usually comes down to financial feasibility—whether the potential revenues are greater than costs. This is particularly challenging with small brownfield properties, such as former gas stations, where the limited square footage of development potential may not justify the costs of environmental cleanup.

Brownfield properties fall into three general categories of redevelopment potential. Table 1-1 illustrates how brownfield properties fit these categories when comparing potential liability costs (cost of cleanup) and the ultimate redevelopment value.

Uncertainty about the potential costs and time required to clean up a brownfield property often prevents developers and investors from taking on these projects. Without some quantification of the cleanup liability, it is not possible even to assess the financial feasibility of a project. Contaminated sites potentially carry liability for cleanup on the property and on adjacent properties. This risk and uncertainty of liability often drive anxiety and paralyzing caution in potential developers and lenders.

Table 1-1. Stratification of Value[4]

Category	Description	Result
	Market value of redeveloped property far exceeds costs.	Private real estate market likely to complete cleanup and redevelopment.
	Redevelopment revenues close to covering development and environmental costs.	Project not feasible for private market to undertake. Some public investment can make it viable.
	Environmental liability far greater than property value.	Difficult to redevelop. Requires significant public investment or change in market.

[4] Diagram adapted from National Brownfields Association.

1.4 - Public Sector Role in Brownfield Redevelopment

In many places, the most financially attractive brownfield properties have been redeveloped by the private market. The remaining brownfields in many communities are in positions where the market potential of the property alone does not outweigh the costs and risks (the yellow and red sites in Table 1-1). In some cases, the environmental liability associated with a property exceeds its value, putting the site financially "under water." In these cases there is not sufficient market demand to make cleanup and redevelopment of the property profitable for a private investor; public sector investment, in the form of grants, loans, and/or technical assistance, may be necessary to make redevelopment of the site financially viable. There are a number of actions local governments can take to tip the scale to make redevelopment of these properties more viable:

- Ensure that local land-use policy and regulations are supportive of property redevelopment to highest and best use.
- Plan and provide for adequate capacity for infrastructure to support highest and best use of the property.
- Obtain state and federal grants to conduct assessment of environmental contamination to decrease uncertainty and lower the overall redevelopment project costs.
- Acquire and conduct cleanup of property with the support of state and federal grants and loans.
- Partner with private developer to bring public resources to support cleanup and redevelopment.

1.5 - Principles for Successful Brownfield Redevelopment[5]

Connect with Community Revitalization Priorities

Frame brownfield projects as community and economic development opportunities that happen to have an environmental challenge. Placing the specific project in the context of a broader community revitalization vision ensures that it will fulfill the potential of meeting community needs and positions it for public and political support.

Begin with the End in Mind

Developing a vision for future use creates energy to focus and drive the cleanup and redevelopment. Communities are typically more enthusiastic and supportive of the vision of revitalization than the technical details of cleanup. The vision for redevelopment should integrate the community's needs and desires with the reality of the regional and local economy. A vision begins to increase the value of the property and make it more attractive to the private market.

The redevelopment vision should drive the design of the cleanup action. Tailored to match the end use in mind, a cleanup plan designed specifically for the project can produce significant cost savings. For example, if the final development includes a basement or underground parking, excavation of contaminated soils can effectively be the first step of both cleanup and construction.

Triple Bottom Line Approach

The key to successfully transforming a contaminated brownfield property into an asset for the owner (private or public sector) as well as the community is the ability to develop an economic strategy for the property that creates a short-term and long-term value gain that more than offsets the liability. Successfully integrating the triple bottom line of environmental restoration, economic development, and community revitalization leverages the investment of cleanup dollars and is in itself an economic development strategy.

Find a Project Champion

Successful projects have a resourceful, passionate person who can focus on the project, generate support, and provide leadership. This champion may be an elected official, local government staff, private entrepreneur, community member, or paid consultant.

Build Public Partnerships

The Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (USEPA) are both regulators and funders of cleanup projects. They both have brownfield offices that can help guide you to financial resources and assist in navigating the administrative and technical process of cleanup. Other agencies such as the state Department of Commerce (Commerce), federal Economic Development Agency, and federal Department of Agriculture can also provide assistance and financial resources to support redevelopment projects. Partnerships with local agencies such as public ports and housing authorities are often key to

[5] This section inspired by and adapted from "Unlocking Brownfields: Keys to Community Revitalization" by National Association of Local Government Environmental Professionals and Northeast-Midwest Institute.

successful redevelopment. Partnerships bring resources to help you achieve mutual goals, and grant applications supported by strong partnerships have a greater chance of success.

Build Public-Private Partnerships

Many brownfield projects are positioned and supported by the public sector and ultimately redeveloped by the private sector. The public sector can promote and guide redevelopment by reducing risk and uncertainty involved in a project and providing support to offset high upfront costs of cleanup. It is important to talk with local developers and financial institutions to understand their concerns, educate them about a project, and develop a strategy to meet both the community's and the market's needs.

Understand and Manage Risk

Concern about the risk of liability for contamination is one of the major reasons why brownfield properties sit idle. A number of tools can be employed together to understand and manage the risk of a property. These include site investigation, cleanup alternatives, funding, administrative and legal mechanisms, and environmental insurance. Local governments or nonprofits can make a property more attractive to private developers by using tools available to them to quantify and decrease risks related to cleanup and redevelopment.

Understand Value

Brownfield redevelopment is one type of real estate development. It is important to understand how the real estate market values property and how that value can increase or decrease. This is a primary driver in brownfield transactions and determining whether or not a project is feasible. Traditional property value assessments tend to diminish the value of remediated contaminated property because of an overreaction to the perception of tailing liability. Coordinating the regulatory approval process with financing needs can appropriately address this concern and mitigate its impact.

Mission versus Profit Margin

Brownfield properties that have high real estate value and great development potential will usually be redeveloped by the private market (the green properties in Table 1-1). Local governments and community organizations more often are involved in projects that do not have great economic fundamentals. It is important to communicate to your constituency and partners that public investment is needed to move brownfields forward. It is important for public funders to understand that the return on the investment accrues to the broader economy in the form of increased economic activity, quite often resulting in higher tax revenues.

Establish a Strong Project Team

Brownfield projects do get complicated and require expertise from a number of disciplines. Beginning with your partnerships, bring together a core team to support your project and hire consultants as needed with expertise in environmental science, strategic planning, community involvement, economics, and engineering.

Identify and Celebrate Small Successes

Brownfield cleanup and redevelopment projects can take several years to come to fruition. Identify and celebrate milestones along the way to demonstrate progress and generate enthusiasm. These can include graphic renderings of future use, awarding of grants, and clearing of the property.

This brownfield site in Spokane is slated to be a future employment center. The city is deveoping the site's reuse feasibility using an Integrated Planning Grant from Ecology.

2 Key Players

Brownfield redevelopment is a team effort; one person cannot do it alone. This section reviews the parties you may need to engage in a project, their interests, and resources they can potentially provide. It is important to understand the resources that these different organizations and individuals can bring to a project. Successful communications and relationships with these organizations will depend on understanding their concerns around brownfields, and their perspectives. Not all of these stakeholders will be involved in every project, and there may be additional special groups or individuals in your community that should be involved.

2.1 - Washington State Department of Ecology

The Model Toxics Control Act (MTCA) authorizes Ecology to investigate and remediate toxic contamination or require potentially liable parties to conduct investigation and cleanup (Revised Code of Washington [RCW] Chapter 70.105D). Ecology has promulgated administrative rules establishing the process for determining standards for cleanup and how remediation is conducted (Washington Administrative Code [WAC] 173-340). MTCA also established a tax on hazardous substances, including petroleum, when they enter the state. The revenues from the taxes are used to support the state's hazardous waste management and cleanup programs and to provide grants to local government. Grants are available to counties, cities, and ports to support planning, assessment, and actual cleanup of brownfield properties.

The Brownfields program integrates land use planning with cleanup policy and aids communities by providing planning tools, outreach, and funding. They apply the concepts of integrative project planning that are based on four fundamental principles: developing vision, understanding risk, respecting time, and leveraging money.

Contact: Ecology Brownfields Program, John Means, 360-407-7188
http://www.ecy.wa.gov/programs/tcp/brownfields/brownfields_hp.html

Figure 2-1. Key Players in Brownfield Redevelopment

Local Government
Role: Regulator, owner
Concerns: Economic & community development, public health, liability

Community & Environmental Groups
Role: Advocate, owner, developer
Concerns: Human health & environment, community welfare

Ecology
Role: Regulator & funder
Concerns: Human health & environment

Department of Commerce
Role: Technical & funding resource
Concerns: Economic development

Property Owner
Role: Owner, developer
Concerns: Financial, liability

EPA
Role: Regulator & funder
Concerns: Human health & environment

Financial Institutions
Role: Investor
Concerns: Risks, financial feasibility

Health Department
Role: Regulator
Concerns: Public health & environment

2.2 - Washington State Department of Commerce

In 2009, the Department of Community, Trade and Economic Development became the Department of Commerce. With the name change, the department has been restructured. The mission of Commerce is focused on growing and improving jobs in Washington. Commerce provides a variety of economic development services for communities that may be related to brownfields, most notably the Brownfield Revolving Loan Fund, infrastructure funding programs, Community Development Block Grant (CDBG), and the Main Street Program.

The Brownfield Revolving Loan Fund—this low-interest-loan program provides bridge financing for environmental assessment and cleanup of brownfield properties. Private as well as public parties may be eligible for this financing.

Infrastructure Funding—Commerce provides funding for infrastructure through several programs, including the Public Works Trust Fund and the Community Economic Revitalization Board (CERB). CERB is a statutorily authorized state board charged with financing publicly owned economic development infrastructure improvements to encourage new business development and expansion in areas where growth is desired. These improvements include industrial water, general-purpose industrial buildings and port facilities, sanitary and storm sewers, industrial wastewater treatment facilities, railroad spurs, telecommunications, electricity, natural gas, roads, and bridges.

Community Development Block Grant—provides federally funded grants to lower-income communities in counties with fewer than 200,000 people and cities with fewer than 50,000 people. CDBG establishes program priorities in partnership with rural local governments to improve the safety, health, and social well-being of lower-income persons.

Main Street Program—Using the Main Street Approach™, this downtown revitalization program helps communities improve the economy, appearance, and image of their commercial districts. Main Street is a comprehensive, incremental approach to revitalization built around a community's unique heritage and attributes. Using local resources and initiative, the state program helps communities develop their own strategies to stimulate long-term economic growth and pride in the heart of the community downtown. (Note: this program is being moved from Commerce to the Washington State Department of Archaeology and Historic Preservation.)

Contact: Brownfield Revolving Loan Fund: Dan Koroma, 360-725-4062
http://www.commerce.wa.gov/

2.3 - U.S. Environmental Protection Agency

The USEPA is authorized under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), otherwise known as the Superfund Law, to respond to uncontrolled releases of hazardous substances, initiate investigations and cleanups, and take enforcement action against responsible parties. The USEPA focuses primarily on National Priority List sites that are considered to be the most polluted and dangerous sites in the country. Brownfield properties typically have much lower levels of contamination than these Superfund sites and are regulated by Ecology rather than the USEPA. The liability for contamination of a brownfield is, however, still related to the Superfund law and its subsequent amendments.

The USEPA has a brownfield program that provides grants and technical assistance to support assessment and cleanup of brownfield properties. Local governments, nonprofit organizations, and tribes are eligible to receive these grants and assistance.

Similar to Ecology's, USEPA's mission focuses on protecting human health and the environment. Through its brownfield programs, it is expanding this view to include a greater perception of economic and community factors.

Contact: USEPA Region 10 Brownfields Team, Susan Morales, 206-553-7299
http://yosemite.epa.gov/r10/cleanup.nsf/sites/bf

Center for Creative Land Recycling

EPA's brownfield efforts include the Technical Assistance to Brownfields (TAB) Communities Program. This program funds regional organizations to offer assistance with technical issues and funding at no charge to local communities. The TAB organization for the western states is a non-profit organization, the Center for Creative Land Recycling.

Contact: Stephanie Shakofsky, Executive Director, 415-398-1080
www.cclr.org

2.4 - Local Health Department

City and county health departments may be involved in brownfield projects in several ways. Local health departments may conduct preliminary assessments and hazard ranking for contaminated sites. They may provide oversight of cleanup through their role as protectors of public health, especially if a site may involve groundwater contamination near drinking water sources. Staff at local health departments may be able to provide technical expertise in areas of site investigation and risk assessment, as well as historical information regarding a site and its operation.

2.5 - Local Governments, Port Authorities, and Tribes

Cities, counties, port authorities, and Native American tribes may be involved with brownfield projects through multiple roles, including economic development leaders, land-use regulators, and property owners. These different roles lead to a number of potential concerns about brownfields.

- Potential liability associated with ownership of contaminated property or contribution to pollution through infrastructure systems and maintenance.
- Impacts on local economy caused by blighted properties.
- Depressed property values and decreased sales tax revenues impacting support of government services.
- Public and environmental health risks associated with contaminants.

Local governments and tribes may receive state and federal grants and loans to conduct the assessment and cleanup of brownfields. They also play a major role in guiding redevelopment through land use regulations.

Public ports in Washington State are playing a major role in cleanup and redevelopment of historic industrial and waterfront properties. Similar to local governments, they can be owners of contaminated property and recipients of state and federal funding. With their economic development mission, ports often play a more entrepreneurial role in brownfield redevelopment than cities or counties.

2.6 - Community, Neighborhood and Business Organizations

Neighborhood associations, nonprofit organizations, and housing authorities have all played important roles in brownfield projects in Washington. Neighborhood associations and chambers of commerce are often important stakeholders and representatives of the broader community. Nonprofits and housing authorities have taken on ownership, cleanup, and redevelopment of brownfield properties to meet their organizational goals.

The concerns of these organizations are usually related to their mission statements, which may focus on public health, community welfare, local business climate, or environmental protection. As potential owners of brownfield property, they have concerns about risk management, liability, and costs of cleanup.

2.7 - Environmental Nonprofit Organizations

There are many regional and statewide nonprofit organizations dedicated to the protection of the environment. These groups play active roles in both policy and legislative matters affecting our state's environment, as well as participating in the public involvement phases of individual remediation and redevelopment projects. These organizations may play an advocacy role to ensure that all the appropriate substantive and procedural requirements of cleanup are conducted and that actions are protective of human health and the environment.

It is advantageous to coordinate efforts surrounding a particular site with interested and relevant groups to enroll their assistance and support early in the project. The support and assistance by these concerned groups in developing technical remediation strategies can have great benefits over the course of redevelopment.

2.8 - Property Owners

Local brownfield programs most commonly interact with small businesses and small property owners, rather than large corporations. Property owners often are driven primarily by the financials of real estate and are concerned about property value, costs associated with contamination, and potential to generate revenue. Because of concerns about liability, many property owners let brownfield property sit idle rather than invest in site assessment to determine the extent of contamination. Because of state and federal policies, private parties are not eligible for site assessment and cleanup grants.

2.9 - Financial Institutions and Investors

There are a number of potential sources of private capital for financing brownfield redevelopment projects, including banks, venture capital firms, individual investors, and lenders that specialize in cleanup projects. All of these potential lenders will be interested in quantifying environmental liability and risk, financial feasibility of a project, and mechanisms to limit liability. Reforms to CERCLA and MTCA have created liability exclusions for lenders. Financing brownfield cleanup and redevelopment is discussed in more detail in Section 3.2.6.

2.10 - Technical Services Providers

In Washington, there is a well-developed field of experts to support site cleanup and redevelopment, including scientists, engineers, planners, economists, architects, landscape architects, marketing specialists, attorneys, and developers. Many of these professional disciplines are required to be licensed by the state to ensure a high standard of quality and reliance.

Traditionally, these services are available through commercial consulting contracts; however, they can also be found within local governments, state agencies, and nongovernmental organizations. Because of the complexity of environmental and land-use regulations, it is advisable to seek assistance from these knowledgeable professionals when appropriate and warranted as described in the following section.

Working with Private Property Owners

Many brownfield properties are owned by private parties. When government agencies or community groups attempt to promote redevelopment of a privately owned property, they must remember to respect the rights of ownership and the concerns of the private party. The legal framework around contaminated property makes an owner liable even if he/she did not cause the pollution. A property owner may feel unfairly treated by this policy. In many instances, the private landowner does not have the financial resources to undertake assessment and cleanup of a contaminated property. Private parties are not eligible to receive grants from the state of Washington. They may be eligible for low-interest loans to support site assessment and cleanup.

There are a number of ways that local governments and community organizations can support private property owners in brownfield cleanup:

- Assist property owner in redevelopment planning and understanding local land use regulations and the state and federal cleanup process.
- Apply for grants to conduct environmental assessments of the property. Local governments and nonprofit organizations may be eligible to receive grants to conduct assessments of properties they do not own. This can help a property owner quantify risk and liability and decrease costs for cleanup and redevelopment.
- Develop public infrastructure to support redevelopment, such as roads, parking, and utilities.
- Respect the property owner's concerns about liability and risk.

2.11 - Establishing a Project Team

Historically, cleanup efforts in first-generation brownfield sites were limited to environmental assessment and consideration of cleanup technique. However, with the evolution of third-generation brownfield sites, the holistic approach toward adaptive reuse and community development demands a broader and more thorough review of the many facets of site redevelopment.

MILESTONE	#1	
	Form a Project Team	

Selecting a multi-disciplinary project team is one of the most important tasks in undertaking a successful brownfield cleanup project. The key discipline areas are very similar for private party, public agency, or nongovernmental organization property owners.

2.11.1 Typical Experts Involved in Brownfield Projects

Strategic leadership—the coordination of the environmental investigation and remediation with the redevelopment of the site. The selection of a qualified team that understands the processes and risks involved in both cleanup and redevelopment is key to a successful project. Strategic oversight of consulting teams is an important role that can be provided within the consulting team, by an independent project coordinator, or through an owner's representative.

Environmental law—as described in Section 4, Managing Risk, the legal framework around brownfields is complex and there are a number of strategies that can be used to limit liability and protect the interests of involved parties. It is advisable to seek well-qualified legal counsel if a party is considering acquiring and/or conducting cleanup of a contaminated property.

Environmental science and engineering—the technical environmental work of conducting site investigations and designing cleanup actions, along with estimating costs to reach regulatory compliance. This work involves characterization of site contaminants through field investigation, laboratory analysis, and interpretation of sampling data. The proficiency of these technical experts is fundamentally important to cleanup of brownfield properties.

Planning—land-use and site development planners work with architects, landscape architects, and engineers to draft the conceptual and detailed plans for redevelopment of property. Planning should be an integrated effort that involves assessment of physical site conditions, infrastructure, and market demand; review of land-use planning policies and regulatory requirements; and land-use permitting, along with contamination cleanup.

Economic strategy and value estimates—appraising the value of property before and after the cleanup of contaminants as well as the economic strategy for moving forward with a cleanup and redevelopment effort. This work often becomes the value statement that is used in reaching a decision to go forward with a project and under what conditions. It evaluates available funding sources, project revenue capacity, ultimate earned value, and the need for outside grant support. A subset of this work is the need to brand or otherwise define the site for success in attracting private and public capital.

Natural Resources—the constraints and permitting requirements associated with designated shorelines and environmentally critical areas, such as wetlands and streams, and endangered species such as salmon have important implications for development of property in Washington. Professional biologists and ecologists are needed to assess regulated natural resources, review potential impacts, and support a permitting strategy.

Cultural assessment—federal and state permits and funding may require an assessment of potential archaeological, historic, and cultural resources on a property. This work involves historic record and database research as well as site investigation to determine the potential for cultural remains and significant historic properties or uses on the site. It may be necessary to develop a plan to address potential impacts to protected resources and evaluate approaches to preserving historic structures and buildings. This issue is important, since many brownfield projects involve excavation of large amounts of soil and fill material that may expose historic resources.

Structural engineering and/or architectural assessment—the assessment of condition and ability to adaptively reuse existing structures on the site. This work entails an architectural and/or structural engineering inspection of the facilities, if any are located on a contaminated property. This may also include preliminary cost estimates on removal or renovation. This work is often undertaken in conjunction with the cultural assessment work related to historic uses.

Public involvement—the coordination of materials and messages distributed to the public during the cleanup and redevelopment process. These experts can develop public messages about a project, create outreach materials, coordinate and staff public meetings, track public comments, and for long-term cleanups, staff a project hotline to respond to community questions and concerns. Public involvement experts can be part of consulting teams or contracted independently.

2.11.2 Contracting Process

Consulting services can be acquired from a single contracted source that in turn brings together a team of needed disciplines, or these services can be acquired independently and managed by the owner. Property owners, public or private, often decide to minimize team management and transactional costs by bringing all the needed disciplines under one contract.

Public agencies in Washington are subject to strict state regulatory requirements to ensure a competitive process when purchasing these professional services. By law, they are required to select the most qualified team, keeping cost considerations at the forefront. In addition to state requirements, most local governments have internal processes to ensure that the selection process results in the most effective team being chosen.

Private site owners and nongovernmental organizations have more flexibility in this regard, although they too seek the best value and would be wise to undertake a competitive selection process. When nongovernmental organizations use grants and/or contributed funds, there is the same need to demonstrate a cost-effective decision in retaining a project team.

2.11.3 Key Questions for Contracting

Is it necessary to contract outside services, or can your organization or a partner organization provide that service? See Table 2-1 for guidance.

What are the contracting policies of your organization?

Does your project funding source carry requirements such as minority- or women-owned business hiring preferences or prevailing-wage requirements?

Are the scope of work, schedule, and expected deliverables well defined?

Does the consulting team have the needed and relevant experience?

Does the consultant have strong references?

Do you feel comfortable and confident in working with the consultant?

Table 2-1. Guidance for Contracting Outside Services

Discipline Area	Role & Purpose	Should this be contracted?	Comment
Strategic leadership	Coordination of the environmental investigation and remediation with redevelopment of a property.	Does not need to be; however, this is a key role for the project and if not properly performed can have significant impacts on timing, outcome and cost.	Could be provided by local government, organization or private owner.
Environmental law	Risk management, limit liability of prospective purchaser, achieve regulatory closure.	Yes, this requires licensing by the state and is associated with significant liability.	Unlikely that this specific expertise exists in local organizations.
Environmental science and engineering	Technical analysis required for site investigations and cleanup approach, with the cost estimates to reach regulatory compliance.	Yes, this is highly technical work, requiring interpretation that will likely require on-site sampling accompanied by approved protocols and chain-of-custody standards.	Unlikely that this specific expertise exists in local organizations.
Planning	Conceptual and detailed designs and permitting for redevelopment.	Can potentially be conducted by local government staff; however, the impact of a poor design and future use concept may be significant. Land use policy may be provided by local government.	Developer or real estate professional may provide this service as a project partner. Local government may provide land use regulatory information.
Economic strategy and value estimates	Assess real estate market and redevelopment potential. Valuation of the property before and after the cleanup of contaminants.	This can potentially be done by organization staff; however, the findings may be questioned and it will not suffice for financing purposes.	Developer or real estate professional may provide this service as a project partner.
Natural resources	Assessment of critical areas, such as wetlands, streams, and wildlife habitat.	This can be done by a volunteer or qualified government professional; however, the findings may be questioned.	Local government may have this expertise on staff.
Cultural resources	Assessment of historic and cultural significance of the site. This work involves site investigation.	This can be done by a volunteer or qualified governmental professional; however, the findings may be questioned.	Local government may have this expertise on staff but not likely.
Structural engineering and/or architectural assessment	Determination of value or ability to adaptively reuse existing structures on the site.	Yes, this requires licensing by the state and is associated with significant liability.	Unlikely that this skill exists in local organizations.
Public outreach/public involvement	Create and distribute materials for the public during the cleanup and redevelopment process. Gather comment and public input on cleanup concerns and redevelopment vision.	This can potentially be done by organization staff; however, there are consultants that do this regularly and can help you navigate the process—especially when regulated by funders.	Local government may have this expertise on staff, or nonprofit may provide this service as a project partner.

3 Cleanup and Redevelopment Process

The process of transforming an underperforming brownfield property into a revitalized community asset integrates three major factors:

- Community vision for the future of their neighborhood and for the brownfield property
- Market potential for redevelopment
- Cleanup of environmental contamination

Brownfield redevelopment involves managing two parallel processes in concert: the cleanup process and real estate development process (see Figure 3-1). Planning for cleanup of the property is most effective when conducted simultaneously with planning for redevelopment. This creates two main efficiencies and benefits:

- The cleanup method can be tailored to the future use, which can result in more cost-effective remedial actions
- Redevelopment planning creates a goal with financial incentives to drive the cleanup

This section outlines key questions to help guide parties through this process.

3.1 - Creating a Vision for Future Use

MILESTONE	#4
Create a Vision for Future Use	

A clear goal for future use of the property provides a framework for the many technical, legal, and financial decisions that must be made in an adaptive reuse project. The advantages of developing a vision at the beginning of the process can be thought of in three categories: financial, technical, and community support. The vision helps attract investment, drive the cleanup effort, guide decision making, and foster support.

Financial—Brownfield projects require significant upfront capital investment in cleanup. A vision for the future use of a property informs a financial strategy to attract public- and private-sector capital investment and demonstrates how to extract the embedded value in a property. This can help bypass many of the negative perceptions and stigmas often attached to a brownfield property because of the complexity and length of time cleanups often require.

Technical—Proceeding with a vision for future use of a property also informs the site investigation and cleanup approach. Site investigation and remedial action decisions can be targeted and aligned with projected development plans. A plan for different uses in different areas of a property enables identification of the most cost-effective and appropriate cleanup options. A vision for future use also supports identification of land-use policy and regulatory permitting issues that need to be addressed. Understanding the end game of a project promotes efficiency and

reduces transactional costs during cleanup.

Community Support—Brownfield projects can get mired in controversy. Developing a shared and comprehensive vision for adaptive reuse helps to create broad support and accelerate regulatory permitting and ultimate redevelopment. By effectively engaging the public and local leaders early in the process, the project can be tailored to better meet community needs and expectations, all within practical considerations of marketplace realities. In many communities, establishing a stakeholder committee early in the planning process has been successful both in leveraging the resources and expertise of different parties and in developing public support.

3.1.1 Developing a Successful Vision: Assessing Redevelopment Potential

MILESTONE	#3
Redevelopment Assessment Report	

A vision for adaptive reuse of a property should integrate the goals of the broader community with the physical conditions of the property and the realities of the local market. This starts with an assessment of the redevelopment potential of a particular property.

Redevelopment assessment is an iterative process, initially relying on preliminary findings and then evolving into a more detailed, informed redevelopment strategy to guide implementation.

3.1.1.1 Key Questions for Assessing Redevelopment Potential

Assessing redevelopment potential raises a number of key questions to explore and answer:

What is the interest of the current property owner in redeveloping the property?

If there is reluctance by the current owner, what is the interest of local government in pursuing acquisition of the property under the right terms and conditions?

What does the community want to be like in ten or 20 years? How would the redevelopment of this property complement that vision?

How can the redevelopment of this property capitalize on the community's assets and meet community needs at the same time?

Public Involvement

Most brownfield projects warrant some public involvement or public education. This can range from a single fact sheet or information flyer to a series of public meetings, visioning sessions and stakeholder group meetings. It is important to manage expectations for the public's level of involvement in the project.

Brownfield cleanups often require a public outreach plan, public comment period and public meetings to ensure the community is informed and involved in the project. Public involvement is often required as part of the cleanup process, development review and permitting process, and in public grant contracts. Specific points in the cleanup and redevelopment process that may require public involvement are indicated in Appendix C.

Human health is often the main concern of the public regarding the cleanup process and it is helpful to keep residents and businesses informed of the type of contaminant, the method for cleanup, the expected schedule, and the anticipated end result. Other concerns include traffic impacts, dust, and noise.

What are the existing and likely future market conditions and trends? What clusters of businesses are thriving in this area? What market demands and opportunities support redevelopment?

What is the property worth in its current condition and what could it be worth in the future?

What are the physical constraints and opportunities of the property, including natural and cultural resources, geotechnical conditions, and infrastructure capacity?

What is the condition of existing structures on the property? Can they be reused, renovated, or deconstructed?

What is the local development regulatory framework? Are any changes needed to zoning, regulations, or plans to allow the future use? What permits are required for redevelopment?

What are the nature and extent of contamination? Are there feasible and economic cleanup options to support the future use? The investigation of environmental contamination can be a long and complicated endeavor and will be discussed further in Section 3.3.

The answers to these key considerations should be captured in a redevelopment assessment report. Understanding of these issues will be refined over time as the environmental investigation and potential development options are studied in more detail. The deliberate reassessment and refinement of knowledge about a property and the adoption of strategies to overcome obstacles are critical to a project's success.

3.1.2 Resources for More Information

SMARTe.org—A USEPA-funded website with resources for redevelopment, including a section on determining viable future land use options and community involvement.

Petroleum Brownfields: Selecting a Re-Use Option. Catalogue of brownfield redevelopment projects and studies of the tools communities used to promote reuse. http://www.epa.gov/oust/pubs/pubspbfreuseoption.pdf

3.2 - Beyond Cleanup: Marketing and Developing Property

Brownfield properties are often located in urban areas, small or large, that are fully served with infrastructure and existing utility systems. In that sense, they are poised for redevelopment. The key to a successful redevelopment is balancing the costs to redevelop, including cleanup and traditional site development expenses, against the potential revenue that the site will generate. Supplemental resources from third parties or government agencies can offset costs to tip the balance toward financial feasibility. The purpose of this section is to provide information to support communities in developing a strategic approach to implement and finance redevelopment.

MILESTONE	#7	
		Marketing and Branding

The development strategy must be flexible and adjusted to reflect new information, but at the same time be true to the long-term vision. The development strategy includes four major components that are interdependent and must be closely coordinated:

- Branding and Marketing
- Site Development Plan
- Land Use Regulating and Permitting
- Financing

3.2.1 Branding

Often a brownfield property carries a stigma that can deter potential investors or buyers. That stigma has two significant undercurrents: first, the site will forever be burdened with a financial and legal liability that will result in future costs that are too unpredictable to assume; second, the site will remain an environmental threat to human health that should be avoided.

To overcome this stigma, it is necessary to properly position the property and its future use for acceptance by the general public as well as the development community. This can be achieved through branding.

Branding is the creation of a personality for a property and redevelopment project that proactively articulates its attributes and role in the community or region. A brand is what people think and perceive about the community. Branding is usually associated with the marketing of a product or service, but the same need and principles apply in brownfield redevelopment. Branding is the opportunity to change perceptions of a property from negative to positive.

Community matters. What differentiates a third-generation brownfield effort from earlier cleanup projects is the promise of what is to come for a blighted and contaminated property. That future promise should capture the forecasted contribution to the local economy, as well as the community benefits. Redevelopment of a property should be framed in terms of what it will become in the future and not what it has been in the past. The future potential beyond cleanup can generate enthusiasm and build broad-based support.

Site branding should be initiated early in the redevelopment process and can include:

- Naming the site if none exists; possibly using a tag line if appropriate. For example, the former Georgia Pacific Mill in Bellingham has been renamed the Waterfront District as part of the redevelopment process.
- Succinctly articulating the long-term social and community benefits.
- Quantifying economic impacts measured in taxes generated and jobs created.
- Creating visual images of the future uses of the property that capture the vision but do not set unrealistic expectations.

These elements can be crafted into printed and Web-based marketing materials. It is important to apply the brand consistently. It will become more effective as it is repeated.

3.2.1.1 Key Questions for Branding

Who is the target audience you want to attract? What do they value?

What are the unique assets of the community and this property?

What positive image or idea is associated with the property?

What differentiates this community and this project from others?

Is there a nostalgic historic icon or connection that can be utilized in the brand?

What does this project represent for the future of the property and the community?

3.2.2 Marketing Real Estate

Local governments and community organizations can play an important role in positioning a property for redevelopment, but in most cases another public or private partner is engaged to undertake implementation of the future-use vision. This section describes two paths for marketing a property to potential investors or partners: the **conventional approach** and the **directed approach**. The two paths can be pursued concurrently and are not mutually exclusive.

> *"Redevelopment of a property should be framed in terms of what it will become in the future and not what it has been in the past. The future potential beyond cleanup can generate enthusiasm and build broad-based support."*

3.2.2.1 Conventional Approach

In this approach, the property owner, public or private, would lead the cleanup of the property and sell or lease it to a third party that would further develop it. To attract private investment in the property, the current owner would implement a targeted marketing strategy to recruit a developer that shares the vision for the site. As with other real estate transactions, the owner can market it on its own or work with a commercial real estate broker. Previous branding of the property is of great value in this approach.

The conventional market approach invites the private market to redevelop the property as it deems best within the framework of the community vision and development regulations. The benefits of this approach are that it brings in private financial resources and minimizes demands on the owner's resources. An important consideration in moving down this path is how the environmental liability attached to the property will be handled in a transaction. The future purchaser can enter the chain of liability or be indemnified by the seller through specific contract terms. Both of these approaches have pros and cons for each respective party and should be fully understood by both parties on consultation with their respective legal counsel.

3.2.2.2 Directed Approach

In the directed approach, the current owner retains possession of the property and undertakes the cleanup, site preparation, and vertical construction. The completed development project will subsequently be sold or leased. The directed approach allows the current owner to determine the specific future use of the property. The local government, community organization, or property owner may seek to establish partnerships with another party to spread risk and leverage resources.

As in the conventional approach, a future-use vision and early branding are essential to a project's success.

3.2.2.3 Educating Development Community

A significant challenge to redeveloping contaminated sites is overcoming the anxieties that prevent the development community from investing in a brownfield. The development community consists of lenders, real estate professionals, and private and public developers. Table 3-1 describes outreach tactics:

Table 3-1. Guide for Educating the Development Community

Groups	Primary Concern	Message	Tactic
Lenders	The unknown cost of environmental liability for the property will result in foreclosure or will limit the ability to sell.	Risk management strategy for the project will protect the borrower and position the property for a profitable future.	Individual meetings or a workshop with lenders to inform them about legal protections to limit liability for lenders and the risk management strategy for the property.
Real Estate Professionals	Sale or leasing of property or building space will be hindered by environmental concerns.	Cleanup actions are tailored to future use and protect human health.	Meetings with individuals, workshops with groups, or presentation at real estate seminars on cleanup effectiveness and success stories.
Private and Public Developers	Assumption of liability if they purchase the property.	Regulatory closure of the site will provide liability protection. Contractual indemnification can also protect prospective purchasers.	Individual meetings with selected potential developers.

3.2.2.4 Key Questions for Taking a Property to Market

Does your organization have the capacity to manage a development project?

Can local development regulations and development agreements be crafted to promote redevelopment of the property in line with the future-use vision and allow for flexibility to respond to market demands?

Are there public or private developers that would be interested in acquiring the property for redevelopment if the environmental liability were managed?

Is there a specific future use that is compelling enough to justify the additional risk of taking the directed approach?

Is public funding available to support the directed approach and reduce potential risk?

How will environmental liability be managed in a purchase and sale agreement for the property?

MILESTONE	#8
Site Development Plan	

3.2.3 Site Development Plan

The future-use vision for the property provides broad guidelines for its redevelopment. This vision will need to be refined in detailed drawings and documents for land-use entitlements, permits, and construction purposes. The level of effort for site development planning will depend on whether the property will be sold after remediation and site preparation or if your organization intends to undertake vertical construction as well. For the purposes of this guidebook, this section will focus on preparing the site "to the curbline" and not on vertical development. This approach is most commonly taken by local governments in brownfield projects.

3.2.3.1 Physical Planning

The site plan for the property will create a sense of place and distinct character for the property as well as analyze the technical details of building scale, density and orientation, transportation, utility requirements, and stormwater management. The site plan seeks to make efficient use of space and create development pads that meet the needs of the future use while maintaining flexibility for evolution of uses as markets change over time. It should take advantage of the physical assets of the property, such as views, and address constraints that may include topography or limited access.

For brownfield properties, the site plan should be coordinated with the environmental investigation and cleanup plan. This will require good communication and teamwork between the environmental consultants and planning and design consultants. Significant cost and time savings can often be found in aligning cleanup and development plans. For example, capping areas of low concentrations of soil contaminants may both serve as a cleanup action and create a desirable grade elevation for redevelopment.

Designing appropriate transportation, water, sewer, power, and telecommunications infrastructure for a property is an essential component of site planning. Local government's ability to plan for and obtain grants to construct infrastructure to

serve a property can be a key advantage to marketing a property and attracting private investment in redevelopment.

The following checklist includes the most common considerations for a site plan:

- ✓ Property Information—Legal description of property; covenants and restrictions; easements, property lines, and area of property.
- ✓ Protected Natural Resources—Wetland delineation; known geologic hazards; floodplains; habitat conservation areas.
- ✓ Existing Features—Utilities; streets; structures; contours and elevations; significant vegetation.
- ✓ Proposed Features—New easements or property line adjustments; new deed restrictions; existing structures to remain; changes in contours and elevations; revegetation and landscaping; proposed buffers around natural resources; cleanup actions; changes to utilities; new walkways and streets.

MILESTONE	#10	
Entitlements and Permitting		

3.2.3.2 Regulatory Planning

The site plan documents will be used to obtain environmental and land use entitlements and permits for development. If the future-use vision for a brownfield property includes substantial change in type of use, as in converting an industrial property into a mixed-use development, changes in land-use policy and zoning may be required. Requests for such policy changes can be led by a local government or property owner early in the planning process. Approval of land-use entitlements can greatly increase the value of a property and help make a project financially feasible. The site plan for a property may be approved by a local government through several mechanisms, depending on the size of the property, local regulations, and intended future use. Approval may be processed as a land-use permit, preliminary and final plat, binding site plan, planned unit development, environmental permit, or development agreement.

3.2.3.3 Key Questions for Site Planning

What scale and intensity of development are intended for the property?

What physical assets of the site can be emphasized or highlighted?

What physical constraints need to be addressed?

Is public access envisioned on the property and, if so, where should it be located and how should it be designed?

Are there easements for utilities or other purposes on the property?

How can vehicle, bicycle, pedestrian, and/or boat traffic circulation be efficiently designed?

What water, sewer, power telecommunications, or other facility improvements are needed?

Are zoning or other land use plan or policy changes needed to support the future-use vision?

How can stormwater runoff be managed?

How can natural or cultural resource protection areas be integrated to benefit redevelopment?

How can the environmental cleanup plan be integrated into the redevelopment site plan?

3.2.4 Land-Use Regulation and Permitting

Redevelopment of a brownfield property must comply with the land use policies and regulations of the local city or county as well as state and federal environmental laws. A brief overview of the major laws and regulations that may apply to a site is provided in Table 3-2.

It is important to note that state law exempts parties from having to acquire certain state and local permits or approvals for cleanup actions that are conducted under a consent decree, order, or agreed order (see Section 4 for description of these legal mechanisms). The substantive requirements of these laws must be met, but strict adherence to the procedural processes might not be required.

A powerful local government tool for promoting redevelopment is to review and revise policies, plans, and code requirements to ensure that they support the vision for future use. Removing regulatory obstacles to redevelopment is an effective strategy for encouraging private investment in redevelopment. Understanding that a project is supported by the community and can efficiently move through the permitting process provides real financial benefit to prospective developers.

3.2.4.1 Resources for More Information

The topic of land use regulation and permitting is broad and complex. A concise and comprehensive review of land use and environmental permitting has been developed by the Washington Public Ports Association.
http://www.washingtonports.org/downloads/environmentalhandbook.pdf
For advice on a particular project, contact your local government planning department or the Washington State Office of Regulatory Assistance.
http://www.ora.wa.gov/

Table 3-2. Land Use and Environmental Laws and Regulations

Policy, Law, or Regulation	Lead Agency	Significance for Brownfield Redevelopment
Comprehensive Plan	City or County	Provides long-term vision, goals and objectives, and land-use designations for land development in the jurisdiction. Other local regulations must align with the Comprehensive Plan.
Zoning	City or County	Designates types of uses, densities, standards, processes, and procedures for land in different districts. Redevelopment of a former industrial site to a commercial or mixed use typically requires a change in zoning.
Critical Areas Ordinance	City or County	Regulations required in every city and county in Washington by the state Growth Management Act. Designed to protect a number of natural resources, including groundwater aquifers, wetlands, wildlife habitat areas, frequently flooded areas, and geologic hazard areas.
Shoreline Master Program	County or City / Ecology	Provides additional layer of regulation in shoreline jurisdiction. Jurisdiction extends 200 feet from ordinary high water line of "shorelines of the state" and associated wetlands and may include associated 100-year floodplain. Most redevelopment projects in this jurisdiction would require a Shoreline Substantial Development Permit—issued by local government and appeal-reviewed by Ecology. Ecology has final approval authority for Conditional Use permits.
SEPA	Local Gov't Agency	Requires review of potential environmental impacts of projects. Level of review is commensurate with complexity, scale, and potential impacts of project.
NEPA	Federal Action Agency	Similar to SEPA, this federal review of potential environmental impacts of projects is required if federal funding is obtained or federal permits are needed.
Clean Water Act — Sections 404 and 401	COE / Ecology	Permit required for placement of fill in regulated wetlands or waterway. This permitting requirement associated with most waterfront projects may trigger additional review through NEPA, Endangered Species Act, and National Historic Preservation Act.
Endangered Species Act—Section 7	NMFS / USFWS / COE	Federal funding or permitting for a project may trigger a need for review of potential impacts to plants and animals listed under the Endangered Species Act. In Washington, this is most commonly related to potential impacts to listed salmon species.
Washington Hydraulic Code	WDFW	Hydraulic project approval required for any diversion, obstruction, or alteration of natural flow or bed of a river. Jurisdiction extends to ordinary high water line.
National Historic Preservation Act—Section 106	Federal Action Agency	Assessment of potential risks to historic, cultural, or archaeological resources. Consultation process involves notification of historic preservation organizations and Native American Tribes. Excavation involved in a cleanup project often raises concerns of unearthing historic artifacts.

COE—U.S. Army Corps of Engineers; Ecology—Washington State Department of Ecology; NEPA— National Environmental Policy Act; NMFS—National Marine Fisheries Service; SEPA— State Environmental Policy Act; USFWS—U.S. Fish and Wildlife Service; WDFW—Washington State Department of Fish and Wildlife

3.2.5 Implementation of Site Plan

The next major step in the redevelopment process is implementation of the site development plan (see Appendix C). To the greatest extent feasible, the implementation of the cleanup plan should be integrated with redevelopment construction. This may involve excavation, grading, and installation of vapor barriers. Steps in developing a cleanup plan are discussed in Section 3.3. Implementation will be unique to each specific site and will require expertise in project and construction management to be successful. Three major implementation steps will be briefly discussed here: site preparation, infrastructure development, and vertical construction.

MILESTONE	#13	
		Site Preparation

3.2.5.1 Site Preparation

Site preparation involves deconstruction or demolishing any buildings that are not historically relevant and grading to the desired elevation for construction of new structures. Since many brownfield sites involve excavation of contaminated soil or placing clean fill material to serve as a contamination barrier, there are often cost-effective opportunities for the cleanup actions to be the first steps of redevelopment construction. Deconstruction and excavation can also provide opportunities to recover and reuse materials such as wood timbers, bricks, and concrete in the redevelopment project.

MILESTONE	#12	
		Infrastructure Improvements

3.2.5.2 Infrastructure

The streets, sidewalks, sewer lines, water lines, stormwater management system, and other utilities are fundamental components of development. Often brownfield properties are served by existing infrastructure. Improvements or connections to that infrastructure conducted by the local government can be a powerful incentive to leverage private investment and enhance a project's financial feasibility.

MILESTONE	#15	
		Vertical Construction

3.2.5.3 Vertical Construction

As mentioned previously, vertical construction on brownfield properties is typically conducted by a private developer. The local government and community efforts to position a property for redevelopment is often key to achieving the final reuse of a brownfield.

MILESTONE	#5	
		Financing the Development

3.2.6 Financing Cleanup and Redevelopment

Compared to building projects on undeveloped land, brownfields have the added financial burden of the cleanup costs and extended transactional costs associated with the time it takes to move from a concept to actually producing revenue. The approach to financing is as varied as the nature of the redevelopment and the type of organization undertaking the effort.

Common to all projects, however, is the need to develop a cleanup and redevelopment financial plan or pro forma. This is essentially a forecast of expected costs; anticipated revenues to offset those costs; the source of funds to carry the project; and the cost of those funds in the interim. An initial project pro forma should be drafted in the redevelopment assessment phase and then regularly updated as more detailed cost and revenue estimates are calculated. The pro forma will ultimately become the basis for securing funding, regardless of the source.

The major components to be considered in a pro forma are:

- Current and redeveloped value of the project
- Cost of contamination cleanup; on-site and off-site improvements to prepare the property for redevelopment; and overhead and soft costs (such as engineering and permitting) to complete the project
- Expected revenue from the site as either ongoing revenue or the resale of the property
- Governmental assistance
- Source and cost of interim funds to finance the work

A financial plan should demonstrate the ability of the project to balance cost and revenue forecasts. The term of the plan should be of sufficient length to demonstrate that balance and to retire any outstanding debt. Additionally, there are significant tax considerations for private property owners that are a function of a range of circumstances.

In addition to conventional financing, brownfield sites are often eligible for outside, offsetting funding, which improves the pro forma expectations and can make a marginal project financially feasible. Conventional financing (public or private) relies on the financial integrity of the project and its ability to generate sufficient revenues to retire its own debt. Outside contributions from other sources, including potentially liable parties, grants, and guaranteed loans, can dramatically improve the financial balance of a project.

The following sections, including Table 3-3, provide an overview of common financing sources for brownfield redevelopment projects.

Table 3-3. Overview of Funding Sources

SOURCE	DESCRIPTION	ADVANTAGES	CONSIDERATIONS
Grants and Low-Interest Loans	Funds from government programs or private foundations. Grants do not require repayment. Loans may have below-market interest rates or guarantees.	Potential to offset project costs and improve financial pro forma balance.	Eligibility requirements. Match requirements. Alignment of project with goals of funding program.
Contribution Claims and Insurance Recovery	Pursuit of funds from parties with potential liability for contamination.	Third parties may be legally liable to contribute funding for cleanup costs or diminution of property value.	Balancing costs of pursuing claims with potential financial benefit. May offset grant funds for environmental assessment and cleanup.
Local Financing Tools	Modified forms of tax increment financing (TIF): Local Infrastructure Financing Tool (LIFT) and Local Revitalization Financing (LRF).	Provides capital for infrastructure and/or environmental costs based on future increases in tax revenues spurred by redevelopment.	Administrative costs of establishing program. Generating enough increase in future tax revenues to provide capital needed to support project.
Conventional Financing			
Commercial Loans	Available to public agencies, private parties, and nongovernmental organizations at interest rates that are based on the creditworthiness of the borrower and the strength of the project.	Available to private property owners and commonly used in real estate development; however, tightening lending markets make them less attractive.	Interest rate impact on pro forma. Difficult lending market conditions. Require high amount of owner equity.
Public Bonds	Several approaches to borrowing funds including revenue bonds and general obligation bonds. Interest rates are based on the creditworthiness and capacity of the borrowing public entity.	General obligation bonds are readily available to agencies that have debt capacity and adequate tax revenues. Revenue-based bonds are likely to require a backstop of general obligation.	Impact on agency's overall ability to issue debt. Bonding for a brownfield may not be a high priority for limited capacity when compared to basic municipal services.
Investor / Partner Contributions	Equity (cash) contribution from active or silent joint venture partners on the project.	The third-party investor/ partner invests equity into the project, based on the project's anticipated financial performance.	Some project control is likely to be transferred. Difficult for public agencies to use. Expectations of parties must be aligned.

3.2.6.1 Grants and Low-Interest Loans

Grants from government agencies or private foundations directly offset project costs, with no requirement for repayment, so they can dramatically improve a project's financial balance. There are many potential grant sources available to brownfield redevelopment projects. An overview of a number of these programs is provided in Appendix A. It is important to be creative in searching for grant opportunities. While there are state and federal grants to support environmental investigation and cleanup, there are many other funding sources that can support a redevelopment project. The connection to a funding program may be based on the project location in a rural or economically disadvantage town, preservation of a historic building, development of affordable housing, or many other factors.

A key concept for grant funding organizations is "leveraging," or combining multiple funding sources. Many grants include a requirement that funds be matched. For example, Ecology provides Remedial Action Grants to local governments for cleanup with a 50 percent match requirement. This means that Ecology will fund 50 percent of total eligible project costs, and the local government must fund the remainder with other sources, such as local tax revenues, bonds, or grants from the federal government or private foundations.

Loans require repayment and likely include the cost of financing expressed as interest. There are low-interest loans available to qualifying brownfield projects through the Washington State Brownfield Revolving Loan Fund. Since loans do require repayment, their impact on a financial pro forma balance is less dramatic than that of grants.

In the case of both grants and loans, there are applicant eligibility and eligible cost criteria that must be understood before these sources are considered in a financial pro forma.

Grants and loans have criteria to determine whether a party is eligible to receive financial support. Most brownfield-related grants, including MTCA Remedial Action Grants and USEPA assessment and cleanup grants, require that the applicant be a local government or nonprofit organization. USEPA funding also requires that the applicant demonstrate that it is not a potentially liable party. One of the few sources of public funding for brownfields available directly to private parties is the Revolving Loan Funds. These low-interest loans are available to private organizations as well as local governments.

Grant and loans may also be applicable only if a project meets specific conditions and circumstances, such as the intended use of the funds, the demographics of the project location, and the administrative pathway being pursued for cleanup.

Before applying for grants and loans, it is important to understand what project costs are considered eligible for each program. For example, while environmental assessment and cleanup grants will reimburse expenses for environmental analysis and engineering, they do not cover legal expenses.

3.2.6.2 Contribution Claims and Insurance Recovery

Two sources of funding specific to brownfield projects are contribution claims from other parties that may be liable for contamination on the property and payments from insurance companies that insured the property or its users in the past. Contribution to cleanup costs may be pursued from these parties under the "strict, joint and several liability" framework of federal and state laws (see Section 4 for more information on liability). Pursuit of these funding sources requires historical research, negotiation, and legal support.

The decision to seek financial contributions from other potentially liable parties for contamination on a site requires careful consideration through a cost-benefit analysis. The contributions of potentially liable parties may offset the amount of a cleanup grant provided by the state or federal government. Additionally, the cost and time required to recover third-party contributions may not justify the benefit to the project.

Financial contributions can also be sought from liability insurance carriers that provided coverage to either the current property owner or previous property owners and site operators. Before 1986, general liability policies did not contain exclusions for liabilities caused by environmental damage. Cost recovery may be pursued from insurance policies that were in place when pollution occurred and covered the property owner, operators, or other potentially liable parties. As with pursuing contribution claims directly from potentially liable parties, historical insurance recovery requires significant commitment of time and resources. It should be noted that seeking liability insurance claims are not actions against a site owner or operator, but are taken against their insurance carrier, to which they paid premiums for coverage.

3.2.6.3 Local Financing Tools

In other states, local governments often utilize tax increment

financing (TIF) to support urban revitalization projects. This tool allows a municipality to issue bonds to finance public infrastructure intended to stimulate private development in a particular area, which in turn generates "incremental" property taxes to repay the bonds. The Washington State constitution does not allow TIF as is it practiced in other states; however, several modified forms of this tool have been developed.

Local infrastructure financing tool (LIFT) programs provide a form of TIF for public infrastructure projects in revenue development areas (RDAs) created by a local government pursuant to RCW Chapter 39.102. The LIFT statute authorizes certain "local governments," including cities, counties, port districts, and federally recognized Indian Tribes, to participate in an RDA for the purpose of financing local infrastructure projects. These funds are not applicable to cleanup activities but may support needed infrastructure.

Local revitalization financing (LRF) permits formation of "revitalization areas" to finance certain public infrastructure projects. LRF's purpose is similar to that of the LIFT program. A distinction is that under the LRF program, a "public improvement" is defined to include "environmental remediation." Moreover, "public improvement" includes expenditure for the purpose of providing environmental analysis. Funding sources include a state contribution and a local contribution. The state sales tax credit may not exceed the amount awarded by the state either through statutory allocations to demonstration projects or through competitive allocations. This program is funded through the biennium budget process and is not routinely available unless re-appropriated.

3.2.6.4 Conventional Financing

Conventional financing involves borrowing funds through financial institutions or local governments issuing bonds. Unlike grants, debt financing requires repayment. While the terms, conditions, and cost of the repayment vary considerably, they all have one thing in common—an evaluation of the risk associated with the debt. The evaluation of the risk determines the cost of the funds (interest) and assigns the risk of repayment.

As with the direct governmental assistance, eligibility for these sources of funding is based on the nature of the organization undertaking the work. The main sources of debt-based financing are summarized in Table 3-3.

3.3 - Environmental Investigation and Cleanup

MILESTONE	#2
Conduct a Phase I Environmental Site Assessment	

3.3.1 How do you Determine if a Site is Contaminated?

Cleanup of contaminated sites in Washington State is regulated under MTCA through Ecology's Toxics Cleanup Program. The administrative rules for implementing MTCA (WAC 173-240) establish the procedural and technical requirements for cleanup of contaminated sites. To allow redevelopment of a contaminated property, it will be necessary to understand the character and extent of contamination present on a property, the potential impacts of that contamination, and to establish agreement with Ecology as to how the impacts will be addressed.

The process for determining if contamination is present on a property and, if so, the nature and extent of pollutants, is generally referred to as "environmental site assessment" (ESA) or "site characterization." The process is typically conducted in steps or phases. A Phase I ESA involves a review of all the records and knowledge associated with the property's past to determine past ownership and activities that may have involved hazardous substances or reported spills. A Phase I ESA also involves a visual survey of the property to look for signs of potential contamination, and interviews with owners and operators to gain insight into activities on the site. To evaluate the potential of off-site impacts to the property, a review of public records of adjoining properties is also conducted.

A Phase I ESA is a core requirement for limiting the liability of a prospective purchaser and for obtaining financing for a project. Under the CERCLA "innocent landowner defense," a landowner can be eligible for liability relief if it made "all appropriate inquiry" (AAI) into the property's previous ownership and history at the time of purchase, and it has not contributed to contamination of the site (see AAI text box). Another reason why these site characterizations are important is that financial institutions typically require Phase I ESAs for securitized loans. A bank may require a loan applicant to provide a Phase I ESA and/or may commission a study on its own to quantify the potential risk and liability the property poses. It is important to note that federal law provides a liability exemption for lenders if they are not the owners or operators of a facility.

All Appropriate Inquiry (AAI)

Federal law provides liability protections to "innocent purchasers" of potentially contaminated properties. To claim the liability protections a party must conduct All Appropriate Inquiry (AAI) . A standard for AAI has been established (ASTM 1527-05) with a number of requirements, including the following:

- AAI must be conducted by an environmental professional.
- The report is valid for six months. If the property transaction occurs more than six months after AAI is conducted, then the report will require updating.

A properly conducted Phase 1 ESA will meet the AAI standard. The shelf life of AAI is critical. Typically, a Phase I ESA is conducted at the beginning of a brownfield project, but it requires updating to support the innocent purchaser defense if a property transaction occurs more than six months later in the process.

Funding Requirements

Private lenders often require an AAI report as part of due diligence for making a loan.

To be eligible to receive a cleanup grant from the USEPA, a local government, tribe, or nonprofit must conduct AAI and demonstrate that it is an innocent landowner.

If the Phase I ESA indicates a potential for contamination, then the assessment of the site proceeds to the next phase, a Phase II ESA. Under MTCA, a detailed assessment of contamination on a site is referred to as a remedial investigation (RI). A Phase II involves collecting soil, groundwater, sediment, and/or air samples on the site to determine the extent of contamination, the types and probable sources of contamination, the level of risk to humans and the environment associated with the contamination, and whether the contamination meets or exceeds levels requiring cleanup.

MTCA prescribes a series of steps to achieve cleanup of contaminated property:

- Site Identification—property owners, operators, or interested parties bring the property to the attention of Ecology. Some communities have undertaken area-wide brownfield inventories to identify these properties and prioritize opportunities for cleanup and redevelopment.
- Hazard Ranking—Ecology, with assistance from local health departments, conducts a preliminary assessment of a site to rank its risk to human health and the environment. Ecology takes a "worst first" approach to cleanup of contaminated sites, putting the emphasis of the state's effort behind the highest-risk sites.

MILESTONE	#6
Remedial Investigation	

- Remedial Investigation—determines the type of contamination and delineates its extent. An RI often includes Phase I and Phase II ESAs. Phase I involves research on a "property" through databases, public records, and interviews. Phase II assessments involve collection of soil, groundwater, sediment, and/or air samples on the subject property. It is important to note that MTCA defines a contaminated "site" as the extent of contamination, not as a property boundary (RCW 70.105D.040 and WAC 173-340-200). To complete an RI, Ecology may require sampling and analysis of areas beyond the boundary of a property.
- Risk Assessment—evaluates the risk that the environmental impacts may pose to potential human health and environmental receptors.

MILESTONE	#9
Feasibility Study	

- Feasibility Study (FS)—evaluates possible human health and environmental impacts and examines possible cleanup alternatives. The FS should integrate the vision for future use with the findings of the RI and risk assessment to identify options for cleaning up the site that meet requirements to protect human health and the environment and facilitate redevelopment of the property.
- Interim Actions—efforts to partially or completely clean up a site before the final cleanup plan is approved. Interim actions are often used to allow site preparation and redevelopment to proceed without waiting for closure of the administrative cleanup process.

MILESTONE	#11
Remedial Design	

- Cleanup Action Plan—describes the selected cleanup methods and specifies site-specific cleanup standards.
- Remedial Design—detailed engineering plans and specifications for implementing the Cleanup Action Plan.

- Cleanup Action—implementation of the Cleanup Action Plan and Remedial Design; toxic substances are removed, contained on site, or treated to make them less toxic.
- Operation and Maintenance—activities conducted at the site after cleanup construction is completed. These can include monitoring and institutional controls such as covenants, codes, and restrictions that limit or prohibit activities that may compromise the cleanup remedy or result in exposure to hazardous substances on the property.

MILESTONE	#14
Remedy Implementation	

3.3.2 How Clean is Clean?

The cleanup standard for a property will depend on a number of factors, including future use of the property, type of contaminants, and risk of exposure to human and ecological receptors. Cleanup standards are composed of a cleanup level and a point of compliance.

MTCA allows for cleanup levels based on two types of land use—unrestricted and industrial. The unrestricted land use is based on residential use, and provides the most protective cleanup levels based on child exposure assumptions (WAC 173-340-740). Industrial land-use cleanup levels are based on adult worker exposures, and require that the site in question qualify as industrial property. This requires the site to be zoned for industrial uses, and future activities must conform to that definition (WAC 173-340-745).

Ecology has three major methods for determining cleanup levels, entitled Methods A, B, and C. The choice of which method to use is determined primarily by the current and future land use and the types of contaminants on the site, as summarized in Table 3-4.

The point of compliance is the location on the site where the cleanup levels must be met. The standard point of compliance is generally defined as throughout the site for each medium (groundwater, surface water, soil, sediment, and air).

Risk-Based Cleanup

In the past, cleanup often focused solely on meeting the numeric cleanup level. As the science of toxicology has matured, there is now more consideration of the pathways of exposure to humans and the environment. This leads to discussion not just of removing contamination, but also of "breaking exposure pathways" and minimizing the risk that people or the environment will come in contact with the hazardous substances. This perspective is especially important in the context of brownfield redevelopment. In developing a strategy that makes redevelopment financially feasible, the option to safely contain contaminants on site may be less expensive than removal. The cost difference between cleanup options may be a key factor in developing a financially feasible project. It is important to note that risk-based cleanup options must still meet stringent cleanup levels and be protective of human health and the environment.

Table 3-4. Methods for Determining Cleanup Levels

Method	Applicability	Description
Method A	Routine cleanups with only a few hazardous substances. Smaller and simpler sites usually with no groundwater contamination.	Utilizes tables of cleanup levels for common hazardous substances.
Method B	Can apply to any site, but typically is used for sites with contaminants not included in Method A tables.	Uses risk assessment equations, applicable state and federal laws, and other requirements. Cleanup levels are based on residential land use and exposure to children, so are typically the most stringent.
Method C	Sites that will be used for industrial activities.	Uses risk assessment equations, specific to the contaminants and conditions of the site. The exposure levels are modeled for adult workers.

3.3.3 Key Questions for the Investigation and Cleanup Process

What are the likely sources of contamination? The investigation effort should focus on likely sources for efficiency of time and costs. The location of sampling points and the laboratory analyses of samples should both be determined based on site history and activities.

Are there potential sources of contamination "upgradient" of your property? Contaminants can migrate downwind or downslope from one property to another.

Have you coordinated your project with Ecology through early and frequent consultation?

What are the pathways for movement of contaminants and exposure to people and the environment? These factors are important for exploring the extent of contamination, the medium (soil, groundwater, sediment, air, soil vapor) in which contaminants are likely to occur, and the potential risk of contamination to human health and the environment.

What is the extent of the contamination? Does contamination extend beyond the boundary of the subject property? Contamination in soil is often heterogeneous. Expect to find "hot spots" of higher concentrations in different areas, depending on sources and unique physical characteristics of soil and groundwater.

What options are available to clean up the site? These options will be explored in the FS.

How does the future land use of the property affect the cleanup? In Washington State, there are different standards for risk and therefore different cleanup levels for industrial use and unrestricted use.

How can cleanup of the property be aligned with plans for redevelopment? Look for opportunities to combine work needed for cleanup with preparation for redevelopment, such as excavation for foundations, site grading, and placement of parking areas.

Table 3-5. Common Brownfield Contaminants and Cleanup Options

Former Use	Common Contaminants	Common Cleanup Options
Dry Cleaners	Chlorinated solvents	Pump groundwater to the surface, clean through treatment process, and inject back into ground. Extract soil vapor with ventilation system. Install barrier between soil and building to prevent soil air vapor from entering structure. In situ treatment—injection of chemicals to break down the solvents.
Automotive repair	Volatile and Semivolatile Organic Compounds (VOCs and SVOCs) Metals	Excavate soil and dispose of in an appropriate landfill. Pump groundwater to the surface, clean through treatment process, and inject back into ground. Extract soil vapor with ventilation system. Install barrier between soil and building to prevent soil air vapor from entering structure. In situ treatment—injection of chemicals to break down the solvents.
Gas Stations and Underground Oil Storage Tanks	Gasoline Diesel Benzene Lead and other metals	Excavate underground tanks and soil and transport to appropriate landfill. In situ treatment—injection of microorganisms or chemicals to break down contaminants.
Landfills	Metals Chlorinated solvents Methane gas VOCs and SVOCs	Excavate fill and soil and transport to appropriate facility. Collect and treat groundwater leachate that flows through the landfill. Capture landfill gases through a piping system and burn methane for energy. Place cap of cleanup material to contain contaminants.

3.3.4 Resources for More Information

There is a large body of technical knowledge of site characterization and cleanup. Local governments and community organizations undertaking brownfield projects typically rely on the advice of regulatory agency staff and consultants to guide them in this area. It is critical to a project's success to build a working relationship with Ecology early in the process. There are a number of resources for more information on common contaminants and remediation methods that are accessible and understandable for those who are not technical experts, including:

Brownfields and Land Revitalization Technology Support Center—a USEPA website that provides information to help decision makers to evaluate strategies to streamline the site investigation and cleanup process, identify and review information about complex technology options, evaluate contractor capabilities and recommendations, and explain complex technologies to communities. http://www.brownfieldstsc.org/

Clu In—a USEPA-sponsored website with information on site characterization and remediation technologies. http://www.clu-in.org/

4 Managing Risk

As with all investments, parties must consider the risk and rewards of brownfield redevelopment. The most common concern about working on contaminated properties is liability. The CERCLA (the Superfund Law) and MTCA create "strict, joint and several liabilities" for contaminated sites.

"Strict, joint and several liabilities" for cleanup responsibility finds its roots in CERCLA, which authorized the USEPA to respond to uncontrolled releases of hazardous substances and pursue responsible parties to pay for cleanup activities. CERCLA defines potentially responsible parties as current site owners or operators; past owners or operators from the time when hazardous substances were released onto a site; those that arranged for the disposal of hazardous substances; and those transporters that selected a site for disposal.

The potentially liable parties have "strict liability," meaning that their responsibility is imposed without fault and they cannot argue lack of diligence or ignorance. "Joint and several liability" means that all potentially responsible parties are responsible for all costs of the cleanup, regardless of the existence of other potentially liable parties. Needless to say, this policy has increased the sensitivity to liabilities and required that potential parties proceed diligently in assessing real and perceived risk.

In Washington State, MTCA requires Ecology to investigate or cause to be investigated suspected contaminated sites and to clean up or require potentially responsible parties to clean up these sites. MTCA includes the same legal liability policy as CERCLA. While Ecology can and does require cleanup of sites, many of the state's sites are remediated through voluntary efforts of site owners who recognize the value in the adaptive reuse of properties.

Property owners and operators, past and present, share in the legal liability for cleanup and the inherent risk that accompanies that responsibility. Prospective purchasers can achieve some level of certainty and protection, but they too must conduct proper due diligence.

The risk factors associated with a site remediation include:

- The extent and type of existing and **known contaminants**, including their potential and actual migration off site.
- The possibility of discovering **unknown contaminants** during the cleanup and redevelopment of the site.
- **Claims by third parties** for damages caused by migrating contaminants.
- **Future regulatory changes** that may put a site currently in compliance out of compliance.
- Increases in actual versus planned **cleanup costs** due to poor construction estimating and/or inflationary pressures related to an extended schedule.
- **Changes in the market demand** for the redevelopment use due to delays in timely completion of the remediation.

There are strategies to offset or minimize these risks. It is critical to identify and implement risk management strategies in the early stages of project development.

4.1 - Framework for Managing Risk

A risk management strategy for a brownfield project should consider **four major factors**:

- Cleanup remedy
- Administrative pathway
- Legal structure
- Funding

There are several methods to mitigate risk and make the project more attractive to those parties with existing risk and to those contemplating assuming risk. These strategies must be taken in context with one another and, as illustrated in Figure 4-1, work together to mitigate risk.

Figure 4-1. Risk Management Strategies

Cleanup Remedy

- Excavate to clean soil
- *In situ* remediation
- Capping and institutional controls
- Natural attenuation and institutional controls

Administrative Pathway

Voluntary Cleanup Program

Designed for small and simple sites, provides flexibility and efficiency.

- Opinion letters
- No further action letter upon completion
- De-listing of site upon NFA determination
- No settlement of liability
- No protection from contribution claims

Agreed Order

Agreement with the State to conduct a number of steps related to site assessment and/or cleanup. The Agreed Order is an interim step that can lead to Consent Decree or the VCP.

- Scope of work and schedule negotiated with State

Consent Decree

Legal settlement drafted with involvement of State Attorney General's office and approved by a judge.

- Scope of work and schedule negotiated with State
- No further action letter upon completion
- De-listing of site upon NFA determination
- Settlement of liability with State
- Protection from contribution claims

Funding

PUBLIC AGENCIES

- Acquire title and manage cleanup
- Establishes public development authority to take title and manage cleanup

PRIVATE PROPERTY OWNERS

- Create a limited liability corporation to hold property

Legal Structure

PUBLIC AGENCIES

- **State and Federal Grants**
  USEPA: Assessment and cleanup grants
  Ecology: Remedial action grants
  Other program grants
- Public bond financing

PUBLIC AGENCIES & PRIVATE PROPERTY OWNERS

- Conventional commercial financing
- **Brownfield revolving loan fund**
  Ecology & Commerce: Capitalized by USEPA
- Contribution from insurance and potentially liable parties
- Contributions from development partners

4.1.1 Cleanup Remedy

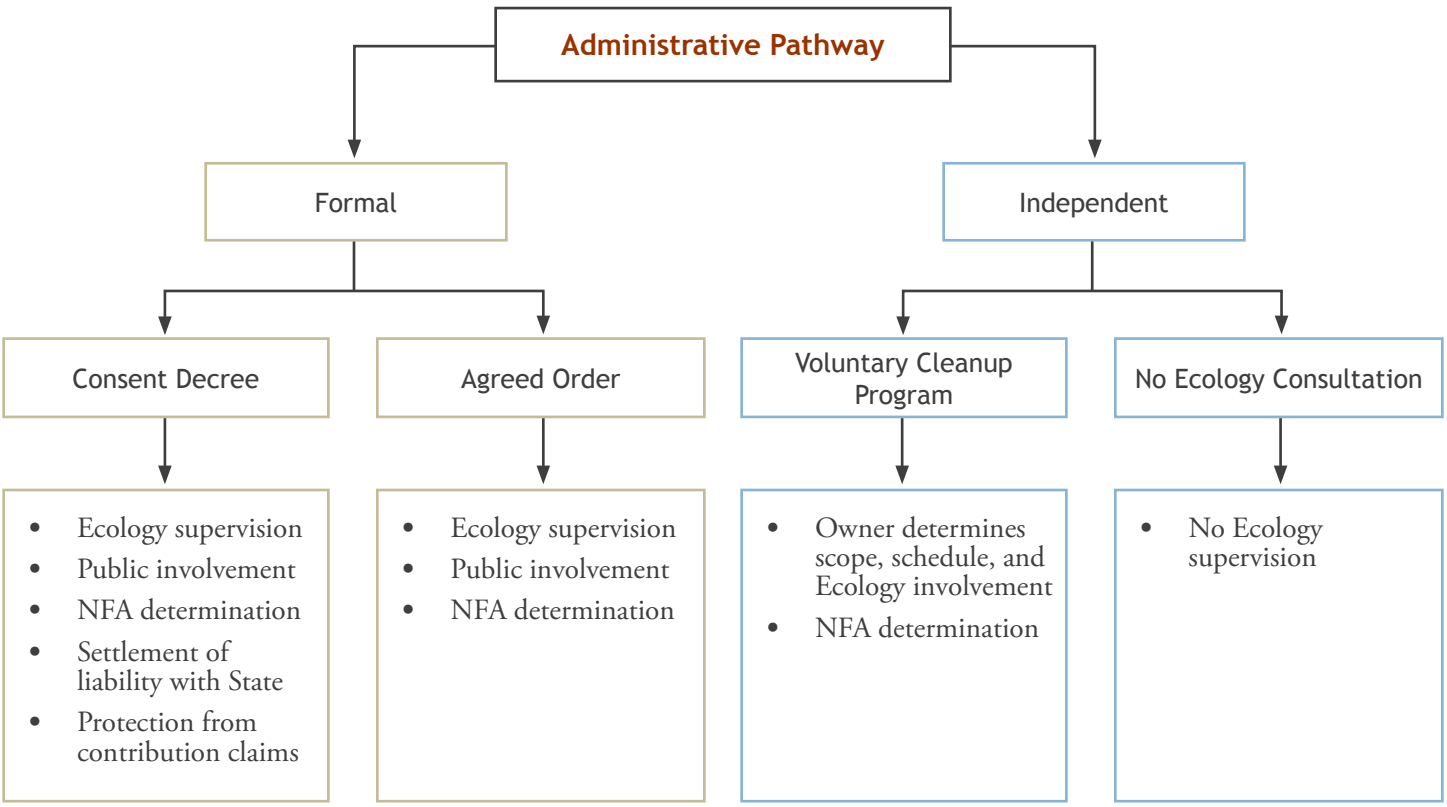
As described in Section 3.3, cleanup alternatives can range from complete removal of contaminants to treatment to leaving materials in place with engineering and institutional controls to prevent exposure. The alternatives carry a different level of risk of potential future impacts from the contamination. The decision on which method to choose is based on risk tolerance and cost as well as on science and engineering analysis.

4.1.2 Administrative Pathways

MTCA provides two administrative paths to manage site cleanup: the formal process and the independent process (see Figure 4-2). The goal of each of these pathways is to reach closure of the cleanup process and remove the property from the state list of contaminated sites. The legal protections provided by the pathways vary, so the choice of path directly impacts future liability and risk. The choice of administrative pathway is also linked to potential funding sources because of applicant eligibility criteria. For example, local governments that pursue cleanup through the Voluntary Cleanup Program (VCP) are able to obtain Ecology Remedial Action Grants to reimburse costs only after the process is completed and a No Further Action (NFA) letter is issued.

The **formal process** involves Ecology oversight through legal instruments of Consent Decrees and Agreed Orders. The formal process is typically employed for large or complicated sites with multiple contaminants in different media. Under the formal process, the scope and schedule of work are negotiated with Ecology. The formal process requires extensive Ecology staff review and public involvement in cleanup decisions. The benefit of the formal process is that it leads to settlement of liability with the state and protection from third-party claims. The disadvantage of the formal process is that it takes, on average, approximately ten months longer than the independent process and entails higher administrative costs. Because of the demands on agency staff, the state typically directs smaller projects to the independent process.

Figure 4-2. Administrative Pathways



Prospective purchasers of a property with no liability for contamination can enter into a formal process to obtain more assurances of long-term protection through a Prospective Purchasers Consent Decree. The legal mechanism is negotiated with Ecology and the Attorney General's Office to identify the scope and schedule for remedial actions. This legal agreement limits the purchaser's liability and provides protection against future lawsuits and contribution claims. This approach typically is applicable to larger and more complex sites in which the proposing responsible cleanup party has sufficient resources to undertake the work. In addition, Ecology must invest significant transactional resources in negotiating an agreement and, as a result, this approach is not as commonly used for smaller, less complex sites.

The **independent process** allows property owners to conduct cleanup with limited Ecology oversight and approval. Following completion of the cleanup, the property owner reports to Ecology the remedial actions conducted, and the agency determines whether the actions fulfill the MTCA requirements. The VCP under the independent pathway allows the property owner to determine the level of Ecology's involvement in the process. Under the VCP, the property owner can obtain opinion letters from Ecology at various points in the cleanup process to determine the sufficiency of plans to meet MTCA requirements. Upon completion of cleanup, an NFA letter can be obtained. Through the opinion letters and NFA letter, the VCP provides greater legal comfort than the fully independent pathway. It does not provide the same level of liability protection as the formal pathway, however.

4.1.3 Legal Structures

The approach to property ownership can insulate owners in varying degrees from some risks and not others. After a cleanup is completed, there remains a "tailing liability" associated with unknown contaminants and long-term effectiveness of the cleanup action. These liabilities are carried forward to future owners and operators unless risk-limiting mechanisms are put into place, such as innocent purchaser agreements, that limit liability going forward. In addition to environmental liability for contaminants and their impacts, there are general marketplace risks in redeveloping a property. These commercial risks, while minimized by sound investment decisions, can be insulated from an organization or public owner by placing site ownership legally in a newly created entity. These options must be examined in detail to understand their advantages and disadvantages.

In any property transaction, environmental risk can be the subject of a contractual agreement between parties to allocate responsibility or provide indemnification. That protection is limited, however, to the resources and the ability of a party to meet its commitments under the agreement. State and federal liable-party policies define actual legal responsibility under the law. Therefore, contractual limitations on liability should be carefully analyzed and agreed to only after consultation with legal counsel. This should include an assessment of a party's ability to meet its obligations.

One organizational structure available to local governments is a public development authority (PDA). A PDA is a public corporation created by a city or county to fulfill a particular public purpose or perform a public function pursuant to RCW Chapter 35.21.730. PDAs are typically created to manage the development and operation of a single project, which the city or county determines is best managed outside of its traditional bureaucracy and lines of authority. The particular project may be entrepreneurial in nature and may intersect with the private sector in ways that would strain public resources and personnel. The cities of Tacoma, Port Angeles, and Bellingham have all recently used PDAs as a tool to promote brownfield redevelopment and community revitalization. There are two main advantages of establishing a PDA to manage cleanup and redevelopment of a brownfield property: 1) with the PDA as the property owner and project lead, the local government would be an arm's length away from the environmental liability; 2) the PDA would be focused on the project rather than balancing it among other priorities of local government, which should lead to a quicker and more efficient redevelopment process. The disadvantage of a PDA is that its establishment involves a significant level of commitment by the local government to put in place and then fund staff to operate the organization.

Private property owners and nonprofit organizations can create a separate entity to own and manage the property to insulate the liability of a cleanup and redevelopment project. However, environmental laws are aggressive in their ability to penetrate insulating organizations in seeking liability responsibility.

All organizational and liability management approaches should be carefully evaluated with legal counsel.

4.1.4 Financial Mechanisms

Risk in this context is a measurement of a party's exposure to financial imbalance, whether that imbalance is created by

the cleanup and remediation of a site or by the ensuing redevelopment. It is an imbalance of revenue streams and financial obligations.

As described in Table 1-1, brownfield sites fall into three major categories: those that are "right side up" financially after cleanup because of strong market value; those that are marginal and require much more scrutiny; and those that are definitely going to require outside subsidy to balance financially.

The financial plan and pro forma for a project are the primary instruments for assessing financial balance (see Section 3.2.6). Financial risk can be reduced by obtaining additional grants, contributions, or low-interest loans to offset projects. An overview of potential funding sources is provided in Section 3.2.6. In the context of risk management strategy, the security of those funding sources is important to consider along with the amount. For example, a cleanup grant may reduce financial risk, but in Washington State, Remedial Action Grants are allocated on a biennial basis by the Legislature, so Ecology cannot guarantee funding over a period longer than two years. There is an important connection between cleanup action and the funding elements of the overall risk management strategy (Figure 4-1). A more protective cleanup action will generally come at a higher cost, so there are critical decisions to be made about how much cleanup can be funded while a positive financial balance is maintained.

4.1.4.1 Environmental Insurance

There are several types of environmental insurance products that address environmental cleanup and related risks. These risks include unexpected cleanup requirements, cost overruns on planned remediation projects, and third-party liabilities (for example, bodily injury or property damage claims). The use of environmental insurance is a complex proposition, but can offer an elegant risk management solution. Insurance policies, unlike grants, are not intended to make a project "right side up" financially, but do mitigate the uncertainty of known and unknown environmental risks.

Commercially available insurance products vary, but unlike more conventional insurance policies, they can be customized to meet the needs of a particular application. Environmental insurance programs have increased across the nation as cleanups have become more complex and as regulations have increased standards and driven some uncertainty into the assumptions of a cleanup project. The Washington State Legislature approved an amendment to MTCA that allows the use of state grant funds to pay the premiums for environmental insurance purchased by eligible local governments.

Site-specific pollution liability insurance is known by many different proprietary names in the insurance market. A common generic name for the coverage is Environmental Impairment Liability (EIL), or Pollution Liability Insurance. EIL insurance typically protects the insured against pollution-related losses associated with previously unknown conditions, including cleanup costs and third-party property damage or bodily injury claims.

Cost overrun policies are designed to pay for unanticipated remediation project costs that exceed original project estimates. Cost overruns have many causes, including the discovery of additional contamination, unexpected site conditions, underestimation of base costs, changes in regulatory requirements, or failure of cleanup technologies.

In many instances, a cost overrun policy is written in conjunction with an EIL policy to provide the full range of protections afforded by both policies for the work, activities, and potential liabilities at a given remediation site. While they are usually two separate policies, they can be modified to work seamlessly together. Additionally, some insurers can provide both coverage parts in one combined policy form.

Because of the transactional cost associated with negotiating and acquiring environmental insurance as a future risk mitigation technique, the affordability of coverage (the premium) is prohibitive for sites with cleanups under $2 million and is questionable for sites between $2 million and $10 million in expected cleanup costs. There has been some movement toward consolidating several sites under a government-created "brownfield development authority" to create the necessary scale to make prospective environmental insurance practicable and affordable.

4.1.4.2 Key Questions for Managing Risk

Has the investigation of contamination been rigorous enough in scope and detail to satisfy concerns about unknown contamination?

How effective will the cleanup be? What is the risk that future cleanup action will be required?

Are contaminants migrating off site and creating risk of action by third parties in the future?

How likely is the potential for regulatory changes in the future that would reopen the cleanup process and require further action?

What is the level of confidence in the site investigation and sampling program? What is the risk of finding unknown contaminants in the future?

Which administrative pathway will provide the liability protection that matches your tolerance for risk and your ability to commit time and resources to legal negotiations?

What organizational structures and contractual agreements are available to provide liability protection and insulation?

How will future property owners be connected in the chain of environmental liability?

Will the redevelopment generate sufficient revenue to offset costs of cleanup and development?

What funding resources are available to offset the costs of the project, including grants, loans, historical insurance policies, and other liable parties?

How do the approach to cleanup, administrative pathway, legal structures, and financing work together to manage risk?

Appendix A

Brownfield Cleanup and Redevelopment Funding Sources

Funding Sources:
View the Department of Ecology's Brownfields Resource Guide
http://www.ecy.wa.gov/biblio/97608.html

Appendix B

Recommended Resources

Recommended Resources

1. Model Toxics Control Act Alternative Financing Evaluation, Washington State Department of Ecology – This report includes detailed information on environmental insurance, bonding, tax incremental financing and other financial tools for Washington communities. It also provides an assessment of the economic benefits of brownfield redevelopment.
   http://www.ecy.wa.gov/programs/tcp/paying4cu/paying4cu.html

2. Organizing a Successful Downtown Revitalization Program Using the Main Street Program Manual, Washington State Department of Commerce – This manual provides in depth information on setting a downtown revitalization program using the Main Street Approach™. Main Street is a comprehensive, incremental approach to revitalization built around a community's unique heritage and attributes.
   http://www.choosewashington.com/business/grow/downtown/Pages/default.aspx

3. Environmental and Land Use Handbook, Washington Public Ports Association – The purpose of this handbook is to provide a general overview of the primary federal, state, and local environmental and land use laws and programs that apply to development in Washington State.
   http://www.washingtonports.org/downloads/environmentalhandbook.pdf

4. Unlocking Brownfields: Keys to Community Revitalization, National Association of Local Government Environmental Professionals – This document includes many brownfield case studies and distills best practices.
   http://www.nalgep.org/publications/PublicationsDetail.cfm?LinkAdvID=65023

5. Brownfields Redevelopment: A Guidebook for Local Governments and Communities. Second Edition. International City/County Management Association.- This document is a very thorough brownfield reference guide for local governments and community organizations.
   http://preview.usmayors.org/brownfields/library/Brownfields_Redevelopment.pdf

6. International Association of Public Participation provides information about involving your community and reaching out to the public.
   http://www.iap2.org/

Appendix C

Brownfield Cleanup and Redevelopment Process

Appendix C Brownfield Cleanup & Redevelopment Process

public review | redevelopment | cleanup | overarching

Creating a Vision for Future Use

MILESTONE #1

Form a Project Team

MILESTONE #3 ★

Redevelopment Assessment Report

- Determine interest of property owner in development
- Assess interest in local government acquiring property
- Understand community-wide long-term vision for future
- Identify how brownfield properties capitalize on the community's assets and meets community needs
- Market assessment of development opportunities and trends
- Property valuation assessment
- Review infrastructure conditions and needs
- Assess site conditions, soil and topography
- Assess building structures and potential for re-use
- Assess natural and cultural resources on property
- Review land use plans, policies, and regulatory framework
- Develop entitlement and permitting strategy

MILESTONE #4 ★

Create a Vision for Future Use

- Visual and narrative description of future use

Marketing and Redevelopment

MILESTONE #7

Marketing & Branding

- Develop site brand to distinguish it in the market
- Educate developers and lenders about property
- Frame and present the environmental risk

Conventional Approach

- Set parameters and invite the market to redevelop

Directed Approach

- Identify a specific use and seek funding and partners

MILESTONE #8

Site Development Plan

- Site layout
- Infrastructure
- Integrate with cleanup planning
- Regulatory approach

MILESTONE #5

Financing the Development

- Determine eligibility for public grants and loans
- Assess conventional financing availability
- Meet due diligence requirements to obtain financing

MILESTONE #10 ★

State, Local & Federal Entitlements & Permitting

- Making changes to local zoning and regulations to achieve the vision
- Environmental review (SEPA/NEPA)
- Local development permits
- State permits (if needed)
- Federal permits (if needed)

MILESTONE #12

Infrastructure Improvements

- Transportation and access
- Water and sewer
- Communications
- Power

MILESTONE #13

Site Preparation

- Building de-construction
- Cleaning and grading

MILESTONE #15

Vertical Construction & Site Improvements

Environmental Investigation and Cleanup

MILESTONE #2

Identify Brownfield Site(s) & Conduct Phase 1 Assessment(s)

- Research past uses
- Title search for former owners
- Identify potentially liable parties and insurance policies
- Identify potential environmental concerns

MILESTONE #6

Remedial Investigation

- Collect samples on property
- Analyze data and compare to cleanup levels
- Develop understanding of contamination source, distribution, and movement
- Assess risk of exposure to people and the environment
- Ecology review

MILESTONE #9 ★

Feasibility Study

- Evaluate options to cleanup the site
- Coordinate with site development plan
- Estimate cost
- Select preferred option
- Obtain opinion from Ecology

MILESTONE #11

Remedial Design

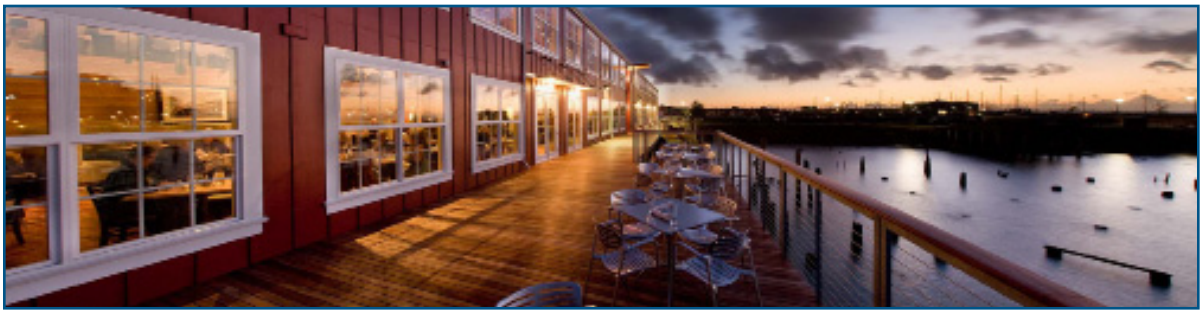
- Engineering design of preferred cleanup alternative
- Bid package for contractors
- Aligned with site development plan

MILESTONE #14

Remedy Implementation

Risk Management

Cleanup Actions - Financing - Administrative Pathways - Legal Structure



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