

Brownfields Redevelopment Toolbox

A Guide for
Massachusetts
Communities



Massachusetts
Department
of
ENVIRONMENTAL
PROTECTION

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Index of Photographs

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Introduction

The Brownfields Redevelopment Toolbox was developed by the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) State Response and Brownfield Program Operations Task Force, in conjunction with the Massachusetts Department of Environmental Protection (MassDEP).

Purpose of this Toolbox

The purpose of this Toolbox is to explain the process of cleanup and redevelopment of contaminated properties in straightforward terms, and to provide municipalities with a systematic, start-to-finish guide to cleanup and redevelopment. This Toolbox can be used to determine next steps for properties in Massachusetts that have redevelopment potential but either have or are suspected to have environmental contamination. Issues related to the redevelopment of such properties may be resolved using a number of different tools, including the Massachusetts Waste Site Cleanup Program, and state and federal brownfield incentives. For the purposes of this Toolbox, the state's cleanup law, M.G.L. c. 21E, the Massachusetts Oil and Hazardous Material Release Prevention and Response Act, will be referred to as "Chapter 21E". The state's cleanup regulations, the Massachusetts Contingency Plan at 310 CMR 40.0000, will be referred to as the "MCP".

How to Use this Document

This Toolbox identifies four steps in the redevelopment process and provides a brief summary of each step. For each step there is a series of Frequently Asked Questions (FAQs), and summaries of available state and federal tools municipalities may want to use in facilitating the redevelopment of contaminated properties. A list of questions is presented at the end of Steps 1 through 3; based on the answers, the user is directed to the appropriate next step. This Toolbox provides a framework to use as you identify contaminated properties in your community with redevelopment potential. Prior to redeveloping a contaminated property, familiarize yourself with this Toolbox and refer to it throughout the various stages of your project.

1. For a general overview of the process for assessment, cleanup, and redevelopment, review the narrative summary provided at the beginning of each section.
2. Be aware that each project is different; treat this Toolbox as a guide that must be adapted to meet the needs of your specific project, not as a one-size-fits-all approach. For example, if you are working to address a specific property where an environmental assessment has already been completed, you will begin the process at Step 3: "Cleaning Up Your Property". Keep in mind, the

redevelopment of contaminated properties can be an iterative process and you may need to revisit certain steps.

3. Follow this approach until environmental issues are resolved or until you reach Step 4: “Redevelopment of Your Property”. This section provides information that can assist you in addressing the issues inherent to marketing and developing a formerly contaminated property (or one where contamination has been properly and safely addressed but has not been completely eliminated).

The Four Step Contaminated Property Redevelopment Process

The Toolbox breaks the redevelopment process into the following steps:

Step 1: Property identification and project planning

Step 2: How to determine if you have contamination on your property

Step 3: Cleaning up your property

Step 4: The end of the line – Redevelopment of your property!

Each section includes information on specific state and federal tools that can help at various steps in the redevelopment process. For more information on federal tools that are discussed in this Toolbox, please refer Appendix A. For more information on state tools discussed in this Toolbox, please refer to Appendix B.

Step 1: Property Identification and Project Planning

This section provides guidance on how to get started. This includes how to identify contaminated properties with redevelopment potential in your community, how to create a redevelopment plan to address those properties, how to initiate project planning, and how to conduct other activities that prepare contaminated properties for redevelopment.

Experience has shown that successful redevelopment of contaminated property comes in many forms and that each community has its own unique opportunities and redevelopment goals. Regardless of a community’s size, history, and number of contaminated properties, planning ahead is extremely important.



Whether your community's goal is to develop a comprehensive redevelopment plan for multiple properties, or the redevelopment of just one contaminated property, successful project planning must consider several factors. Two key upfront considerations are (1) what are the resources available for environmental investigation and cleanup of the property(ies), and (2) how will the property(ies) be redeveloped and/or marketed for redevelopment. Considering these issues early on can make a big difference in successfully meeting your community's redevelopment goals. The next several pages provide information to help you understand the process and guide your community through the property identification and project-planning phase.

FAQs

What are the types of properties for which this Toolbox may be used?

The Toolbox is meant to address abandoned or underutilized properties, including industrial and commercial facilities where expansion or redevelopment may be complicated by actual or suspected environmental contamination. Generally known as brownfields, these properties are officially defined by the federal government in The Small Business Liability Relief and Brownfields Revitalization Act of January 11, 2002, ("Federal Brownfields Law", <http://epa.gov/brownfields/pdf/hr2869.pdf>) as any "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant." Specific examples of properties which could qualify include: abandoned gas stations, old factory and mill complexes, foundries, junkyards, mine-scarred lands, old landfills, and other underutilized or abandoned properties.

Why is brownfield redevelopment important?

These properties are often abandoned or underutilized, with owners no longer maintaining the property or paying property taxes. Abandoned properties can quickly become eyesores, and may attract vandalism and illegal dumping. These activities degrade the environment, economically depress our communities, and potentially put our health at risk. Productively reusing such properties encourages sustainable development by reducing urban sprawl, cleaning up the environment, and creating jobs for the community and region.

What is the advantage of having a redevelopment plan for contaminated properties in my community?

Municipalities are in a great position to head a community-led redevelopment effort to facilitate the redevelopment of brownfield properties. Local citizens and municipal officials often have the best knowledge of brownfield properties and can provide critical expertise and resources to help a local initiative succeed. An additional advantage of a community-based approach is that community members have a direct role in determining how environmentally-impacted properties are cleaned up and redeveloped to best support the community's future development plans. Having a redevelopment plan in place may also assist communities in applying for state and federal funding.

Activities and Available Tools

If you have identified properties that have actual or suspected contamination with redevelopment potential, you've taken the first step. So what are the next steps? It depends on what your community's plans or desires are for future development. Some questions you should consider are:

- Does your community want to assess and/or clean up these properties to market them to potential commercial, industrial or residential buyers or developers?
- Does your community want to retain some of these properties for its own use, perhaps as municipal facilities or as open-space, or for affordable housing?
- Has your community been approached by potential buyers or developers who have been subsequently "turned off" because of a property's actual or suspected contamination?
- Does your community have (or want to develop) a comprehensive plan for redeveloping its abandoned or underutilized properties that have actual or suspected contamination?

Forming a Brownfields Redevelopment Team

If the answer to any or all of the above questions is yes, your community may want to consider forming a local team of property redevelopment stakeholders. Such a team is typically comprised of public and private parties from your community who have an interest in the well-planned cleanup and redevelopment of local brownfield properties. The team can be as large or small and as formal or informal as the community needs. It can be tailored to the size and complexity of one specific project, or it can guide an entire redevelopment vision. It can be made up of elected officials, planners, attorneys, environmental professionals, economic development officials, and/or members of local environmental and citizen interest groups.

Your team should also include a Licensed Site Professional (LSP), a private sector consultant licensed to oversee assessment and cleanup work in Massachusetts. More information on LSPs can be found under FAQ "Who Performs the



Environmental Site Assessment?”. You may also want to include an environmental attorney who has experience with Chapter 21E. The team can bring valuable perspectives from each member’s area of expertise to help develop a mission and determine long-term and short-term goals based on the community’s redevelopment needs and desires.

In addition to forming a team, it can be quite helpful to contact other local communities, private entities and professionals with experience addressing these properties. EPA maintains a list of current and former grant recipients in Massachusetts who are well versed in the issues encountered at these properties and who are generally happy to share their knowledge: <http://www.epa.gov/brownfields/reg1.htm - mass>.

Understanding Liability

A community planning to undertake assessment, cleanup and/or redevelopment of contaminated property should hire an attorney experienced with Chapter 21E. An attorney can help you understand your potential liability and determine whether liability protection is available.

Under Chapter 21E, liability protection is often available to parties involved in brownfields redevelopment projects. Municipalities, for example, have an exemption from 21E liability when they foreclose on a tax lien in order to sell a property to a new developer. Owners and operators who are not responsible for the contamination (“eligible persons” as defined by Chapter 21E) may have liability protection once they complete a cleanup at a property. And tenants, redevelopment authorities, downgradient property owners, and secured lenders may also have liability protection under Chapter 21E. Parties that are not eligible for liability protection directly under Chapter 21E may be eligible to apply for liability protection provided by a Brownfields Covenant Not to Sue (CNTS). An environmental attorney can help you determine whether you meet the specific requirements that allow for these protections. More information on Chapter 21E liability protection and the Brownfields Covenant Not to Sue is provided in Appendix B.



Determining the Intended Use for the Property

The intended reuse of a property plays an important role in the redevelopment planning process. Chapter 21E and the MCP allow parties to take the planned future reuse of a property into consideration during cleanup design. For example, if the redevelopment plan calls for the construction of a light industrial facility, it may be appropriate to apply cleanup standards that allow for some contamination

to be left in place. A redevelopment for residential or open space use, on the other hand, may require a higher level of cleanup.

If the intended use is not known at the beginning of the project, community representatives or your brownfields redevelopment team should make every attempt to identify the general type of desired redevelopment for the property or area. This can be based on current or proposed zoning, development interest, or other factors. In the absence of this information, the most conservative cleanup assumptions would likely have to be made at every stage of the project. While this approach preserves the greatest number of options for development, this may significantly increase the time and expense of the project. These factors are discussed in greater detail in Step 3: “Cleaning Up Your Property”.

Financial Assistance for Community-Led Assessment and Cleanup Activities

Forming a team and determining the best reuse of local contaminated properties are important first steps that require resources. EPA offers brownfields grants on an annual basis to assist communities, non-profits and other entities with various activities related to contaminated property redevelopment. One of the grants EPA makes available to communities is the Brownfields Assessment Grant. This grant provides funding for site assessment, planning and community involvement activities. This grant can also provide funding for creating inventories of contaminated properties with the potential for reuse (see “Developing an Inventory of Contaminated Property”). More information about the Brownfields Assessment Grant can be found in Appendix A, and on EPA’s Brownfields web page: www.epa.gov/brownfields/assessment_grants.htm. EPA New England offers additional site assessment assistance through its Targeted Brownfields Assessment Program. This program allows EPA to use federal contractors to perform assessment work on behalf of communities, non-profits, and other eligible entities. Funding is typically available on a rolling basis.

State assessment funding is available through the Brownfields Redevelopment Fund (BRF) administered by MassDevelopment. This program allows municipalities, non-profits, and private sector developers to access up to \$100,000 in low interest loans for assessment activities at properties located in Economically Distressed Areas (EDAs). For more information about the BRF refer to Appendix B.

Developing an Inventory of Contaminated Properties

Creating an inventory can help you identify the number and location of abandoned and underutilized industrial and commercial properties in your community. With an inventory in hand, you can begin to prioritize cleanup projects and apply for funding and other incentives offered by state and federal agencies.

Communities are often in the best position to track contaminated properties that have redevelopment potential. Local governments often have direct knowledge of underutilized properties that might provide the greatest redevelopment benefit to the community. Municipal planning and economic development staff are often a good choice to lead the inventory effort at the local level. In many communities, these departments assign a staff person to coordinate with other municipal departments to gather information for a brownfields inventory. The tax collector's office can identify properties where property taxes are owed or are subject to a tax lien. The assessor's office can provide current and past ownership information. Building and health departments can identify violations related to those codes. The local fire department can help identify properties that stored chemicals. The library or historical society may provide information about past uses with potential for contamination. You may also want to enlist the help of local citizens and volunteer service organizations in your information collection efforts.

Data collected and maintained by state and federal agencies may also be useful in the early stages of inventory development. MassDEP's list of known contaminated sites is available online (<http://db.state.ma.us/dep/cleanup/sites/search.asp>). The same data are available for digital mapping purposes from the Massachusetts Geographic Information System office (<http://www.mass.gov/mgis/>). MassDEP's list of known contaminated sites is most useful when a community has already identified vacant or underutilized properties and wants to determine their environmental regulatory status. This list should not be considered a list of brownfield properties since it includes all known contaminated properties, regardless of redevelopment potential. As discussed previously, funding through EPA's Brownfields Assessment Grant Program can be used by a community to assist its inventory efforts.

Determining Your Next Step

The following series of questions will help you determine the next step in the redevelopment process:

- Has your community identified a property(ies) where redevelopment is complicated by real or suspected environmental contamination, and the nature and extent of that contamination is not known?
 - If "yes", go to Step 2 "How to Determine If You have Contamination on Your Property".

- Has your community identified a property(ies) where contamination exists and the nature and extent of that contamination has been documented?
 - *If yes, go to Step 3, “Cleaning Up Your Property”. Also see Step 1, “Developing an Inventory of Contaminated Properties”.*
- Has your community identified a property(ies) where contamination exists, and the risk posed by the contamination has been analyzed?
 - *If yes, go to Step 1, “Developing an Inventory of Contaminated Properties”. Also refer to Step 3, “Cleaning up Your Property”*
- Has your community evaluated cleanup options for a brownfield project and selected a remedial action?
 - *If yes, go to Step 4 “The End of the Line – Redevelopment of Your Property!” for assistance in marketing or developing your property.*

Step 2: How to Determine If You Have Contamination on Your Property

Once you have identified a brownfield property that your community would like to see redeveloped, the next step is to determine whether there are any environmental conditions present that may affect future use and redevelopment. This will assist you in determining cleanup costs for a future developer.

If a property has been reported to MassDEP due to contamination exceeding reportable limits it will be listed in MassDEP’s Waste Site Cleanup database (<http://db.state.ma.us/dep/cleanup/sites/search.asp>). If you are interested in viewing environmental information for a property you can conduct a file review at your MassDEP regional office. Using information found in the database and the corresponding regional file, a community can determine where the property is in the regulatory cleanup process. Refer to Appendix B for a list of MassDEP staff who can assist communities in this effort.

A community interested in undertaking a site assessment at a property should hire a Licensed Site Professional (LSP). LSPs are licensed by the Commonwealth to oversee assessment and cleanup work in Massachusetts. For more information on LSPs refer to FAQ “Who Performs the Environmental Assessment” in the following pages of this Toolbox.

If the property has not been reported to MassDEP, or if minimal environmental information exists for the property, your LSP will likely evaluate historic uses of the property and past environmental reports associated with adjacent properties. Assessment can also include collecting and analyzing soil and groundwater samples.

FAQs

What is a “site” under the MCP?

Under the MCP, a site is any location where oil or hazardous material has come to be located. The boundaries of a site, as defined by the MCP, are not usually the same as property boundaries. Some sites have contamination that only covers a small portion of a property, while other sites have groundwater contamination that causes contamination to extend across multiple properties. Environmental site assessment can help determine the boundaries of an MCP site.

What is an environmental site assessment?

Environmental site assessments are conducted in two phases and are used to determine the nature and extent of contamination that exists at a property. A Phase I Initial Site Assessment can include limited environmental sampling and analysis to test for the presence of contaminants and to determine whether or not immediate response actions must be taken. If Phase I testing indicates the presence of contaminants above state-specified levels, then assessment proceeds to Phase II, the Comprehensive Site Assessment, which requires more comprehensive sampling to document of the types, amounts, locations and sources of contaminants. Phase II also may include a risk characterization, which quantifies the risks posed to public health, welfare, and the environment as a result of the contamination. Upon completion of Phase II work, a determination is made whether a cleanup is required. This decision is based on contaminant levels, risk analyses, and the proposed future use(s) of the property.

Why should I do an environmental site assessment?

A site assessment determines the nature and extent of contamination at a property and the potential human health and environmental risks posed by that contamination. It also helps determine the type of cleanup required and the associated costs. When communities conduct site assessments at contaminated property they are generating critical information that will help market the property to interested developers. A community undertaking the redevelopment of a contaminated property for municipal purposes will be required under state law to conduct the necessary assessment and cleanup activities.

Another reason to do a site assessment is to satisfy EPA's All Appropriate Inquiry (AAI) rule that was developed as part of the 2002 amendments to the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). AAI is a process of evaluating a property's environmental conditions, and must be done in order to obtain certain liability protections under federal Superfund Law. Meeting AAI requirements is also necessary prior to applying for certain EPA brownfield grants. For more information about AAI please refer to "What is meant by AAI?" later in this FAQ section.

FAQs, continued...

Who performs the environmental site assessment?

Under MCP, parties that assess and clean up contaminated sites must hire a private-sector Licensed Site Professional (LSP) to ensure that work is done in accordance with 21E and the MCP. LSPs are licensed by the Commonwealth to provide oversight for environmental work performed at contaminated properties in Massachusetts. When hiring an LSP, make sure you check their qualifications and references, just as you would do before hiring any contractor or professional. For information on the Massachusetts LSP Program and to find an LSP, please visit the LSP Board website: <http://www.mass.gov/lsp>. MassDEP has also published a fact sheet to assist you in hiring an LSP: <http://www.mass.gov/dep/cleanup/laws/lsp.doc>.

Who pays for the assessment?

In many cases, a prospective purchaser will fund an assessment at a brownfield property prior to purchase to help determine the amount of potential cleanup costs. These developers can access low-interest loans through MassDevelopment's Brownfield Redevelopment Fund (BRF) to conduct assessment work prior to or after they buy a property (see Appendix B for more information on the BRF). Municipalities undertaking economic development or affordable housing projects can also access funding through the BRF.

EPA also provides a significant amount of assessment funding to Massachusetts municipalities, the main source of which is through an annual competitive grant process. In addition, the EPA Region One Targeted Brownfield Assessment Program can provide municipalities with additional assessment services through federal contractors. Finally, MassDEP has limited funding it can use to perform assessment activities on behalf of municipalities using state contractors. For more information about all available assessment funding programs refer to Appendices A and B.

Can I do an environmental site assessment before I own the property?

Yes, if you have permission from the property owner. Municipalities and developers often include access rights and permission to conduct an environmental assessment as part of pre-purchase agreements with property owners.

FAQs, continued...

What is meant by “All Appropriate Inquiry” (AAI)?

All Appropriate Inquiry, or AAI, is an environmental site assessment that meets the requirements of EPA's All Appropriate Inquiry rule (40 CFR 312). Following the requirements of AAI when conducting a pre-purchase environmental site assessment will give a prospective purchaser liability protection under the federal cleanup law (CERCLA) for those environmental issues that are identified by the AAI assessment.

Thus prospective property owners may be eligible for protection under CERCLA if AAI is conducted prior to purchasing a property. To maintain protection from CERCLA liability, property owners must comply with certain continuing obligations provided in the statute. For more information on the AAI rule please refer to <http://www.epa.gov/swerosps/bf/regneq.htm>.

Will an environmental assessment performed several years ago meet the new AAI requirements?

No. Information from older Phase I reports may be used as a resource, but the 2002 Federal Brownfield Act requires that a Phase I assessment used to meet the requirements of AAI must be completed within a year prior to taking ownership of the property. This is to ensure that the current environmental status of the property is known at the time the property is transferred. In addition, certain aspects of the AAI assessment must be completed within 180 days prior to the property transfer (i.e., the on-site investigation, the records search, the interviews, and the search for environmental cleanup liens). This protects the buyer from inadvertently accepting liability for contamination that may have occurred between the times the initial assessment was conducted and when the property actually transfers.

Activities and Available Tools

Phase I Initial Site Assessment

In Massachusetts, a Phase I assessment requires that an LSP review existing data relating to a property and conduct preliminary testing of environmental conditions.

Phase I site assessments are used to identify contamination at a property and its surrounding area. Contamination can consist of hazardous substances and/or petroleum products. If the Phase I assessment does not indicate a significant potential for health or environmental risk due to contamination at the property, then further investigation or cleanup may not be needed.

If the assessment is inconclusive or identifies potential contamination that poses a health or environmental risk as defined by the MCP, further environmental assessment and/or cleanup may be needed. Soil, sediment, soil vapor, and/or groundwater sampling may be required to determine whether the property is contaminated and if it needs to be cleaned up before it can be redeveloped. More

comprehensive sampling for contamination and determining the extent of cleanup at the property is typically conducted under the Phase II assessment.

Phase II Comprehensive Site Assessment

A Phase II site assessment under the MCP is a more detailed evaluation of environmental conditions at a property. This evaluation relies on the collection and analysis of soil, sediment, soil vapor and/or groundwater samples, and other measurements taken at the property to confirm and quantify the presence of contamination.

Once contamination is confirmed, and the levels of contaminants are known, an assessment of risks to human health and the environment is conducted. Once a risk assessment has been conducted a decision can be made as to whether or not the property poses an unacceptable environmental or health risk. If unacceptable risk is determined to exist at the property, a plan can be developed to clean up the property and reduce the risks to human health and the environment.



The Phase II site assessment is designed to evaluate the nature and extent of contamination and the degree of health or environmental risk posed by exposure to such contamination. Based upon the Phase II assessment results, additional work may be needed, as discussed in Step 3 of this document, “Cleaning Up Your Property”.

Determining Your Next Step

The following questions were developed to help determine your next step in the brownfields redevelopment process:

- Did my environmental site assessment reveal any contamination or other recognized environmental conditions on this property that pose an unacceptable environmental or human health risk?
 - If no, go to Step 4, “The End of the Line – Redevelopment of Your Property!” for assistance in marketing or developing your property.
 - If yes, and you want to clean up the property before marketing it for redevelopment, go to Step 3, “Cleaning Up Your Property”.
 - If yes, but you do not want to clean up the property before marketing it for redevelopment, go to Step 4, “The End of the Line – Redevelopment of Your Property!” for assistance in marketing or developing your property.
- Does the contamination require cleanup or other corrective measures in order to protect human health or the environment?
 - If yes, go to Step 3, “Cleaning Up Your Property”.

- Can the contamination be addressed through a deed restriction (see FAQ: “What are Institutional Controls”)?
 - If yes, go to Step 3, “Cleaning Up Your Property”.
- What financial or other resources are available to address this project?
 - See Appendix A and Appendix B for a list of resources

Step 3: Cleaning Up Your Property

The results of your Phase II assessment may indicate that there is contamination present that exceeds limits set in the MCP. Cleanup may be necessary to either prevent exposure to contamination by future users of the property or to stop a release of contamination into the environment. This Step is intended to provide general information on cleanup and its role in the brownfields redevelopment process.

FAQs

How do you know when a property needs to be cleaned up?

If, after conducting an environmental assessment as described in Step 2, it is determined that state-specified risk limits are exceeded, then cleanup is necessary. As with assessments, cleanup work must follow the requirements set forth in the Massachusetts Contingency Plan (MCP). Phase III and Phase IV activities conducted under the MCP are used to determine the most cost-effective cleanup solution and to provide a design for its implementation.

Who do I need to hire to clean up the property?

If you haven't done so already, you must engage a Licensed Site Professional (LSP) to work with you to develop and implement a plan to address the contamination at your property. When hiring an LSP make sure you check their qualifications and references, just as you would do before hiring any contractor or professional. For information on the Massachusetts LSP Program and to find an LSP, please visit the LSP Board website: <http://www.mass.gov/lsp>. MassDEP has also published a fact sheet to assist you in hiring an LSP: <http://www.mass.gov/dep/cleanup/laws/lsp.doc>.

Depending on the legal and regulatory complexity of the project, it may be necessary to engage an environmental attorney who is familiar with state and federal cleanup laws to assist you in dealing with the legal issues relative to the cleanup process.

FAQs, continued...

How much will the cleanup cost?

The more information you have about the nature and extent of contamination on your property, the easier it will be to determine the type of cleanup required and its associated costs. In addition, determining the future intended reuse of the property could allow you to tailor the cleanup to reuse and reduce associated cleanup costs.

Incorporating cleanup activities into the general construction process or using innovative architectural designs may help reduce costs. For example, it may be possible to reduce the amount of contaminated soil that needs to be excavated and disposed of by constructing buildings over less-contaminated areas, and/or paving areas of higher contamination to reduce exposure.

In addition, cost-effective remediation techniques designed to address contamination under buildings and in groundwater have been developed, and may be appropriate for your project. Your LSP can help explain these remediation techniques, and help you choose the one most appropriate for your property.

How long does a cleanup take?

Under the MCP, cleanups must be completed in 6 years. However, the length of time necessary to complete a cleanup is highly property-specific. Over 60% of properties in Massachusetts are cleaned up in under a year, while other properties may require more than six years to remediate. Public and private sector parties undertaking brownfields projects can get extensions of regulatory deadlines through a Special Project Designation (SPD) Permit. This permit is intended for more complex projects where there are multiple releases and/or properties involved. The SPD Permit allows for additional time to meet deadlines established under the MCP.

What fees must be paid during the cleanup process?

MassDEP requires that fees be paid at certain points in the cleanup process by the party undertaking work. For example, when parties apply for permits under the state's waste site cleanup program they are required to pay a Permit Application Fee. MassDEP also requires that Annual Compliance Fees (ACFs) be paid annually until the property is completely cleaned up. Municipalities that are undertaking cleanup at contaminated properties should consult with their LSP early in the process to determine what fees they must pay. More information on ACFs can be found at: <http://www.mass.gov/dep/cleanup/approvals/fees.htm>.

What types of cleanup might be necessary at contaminated properties?

Impacted soil, sediment, groundwater and indoor air may need to be addressed during the cleanup of a contaminated property. Techniques have been developed to address contamination in each of these media. The type of cleanup selected is based on situation-specific considerations such as type of contamination, amount of contamination, depth to groundwater, and extent of risk to human health or the environment. Additional costs might be incurred during the demolition phase to address issues such as asbestos or lead-based paint.

FAQs, continued...

How clean is “clean enough”?

MassDEP requires that site cleanups be protective of human health and the environment for current and reasonably foreseeable uses of the property. This does not mean that all sites must be cleaned up to the most stringent standards or that everything must be removed – in fact most cleaned up sites have some level of contamination remaining on the property. The use of the property, the activities that take place there and the location of the remaining material will determine how much contamination can safely remain. These factors are considered in the risk-based cleanup standards published by MassDEP and are used by LSPs during their evaluations.

What are institutional controls?

In cases (for example, at an industrial site) where the contamination is not cleaned up to the most stringent of standards, Institutional Controls (ICs) may be required as part of the cleanup. ICs are legally enforceable grants, notices, or restrictions that limit or prevent certain activities or uses of the property, groundwater, or surface water so that future exposure to contamination can be prevented or minimized. In Massachusetts, an IC will generally take the form of an Activity and Use Limitation (AUL), as defined under the MCP. AULs are recorded on the property deed, and describe any restrictions on activities or uses of the property, as well as any maintenance conditions that must be followed to ensure the safe use of the property.

AULs are typically placed on a property's deed by the landowner. AULs may be viewed at the relevant Registry of Deeds or at MassDEP's regional offices.

Activities and Available Tools

Types of Cleanup for Contaminated Properties

The type of cleanup required at a property depends on a number of factors. These factors include location, type and amount of contaminant(s) present, how widespread and deep the contamination is, and the intended future use of the property.

The most common types of cleanups include removal or treatment of contaminated soil, capping and/or covering the contaminated area, and cleaning up groundwater. However, additional methods for mitigating risks at contaminated properties include the use of Institutional Controls (see FAQ “What are institutional controls?” above) and engineering controls. EPA has published an online compendium on cleanup options at:

<http://www.epa.gov/tio/download/misc/roadmap3edition.pdf>.

Engineering controls are parts of a cleanup that are constructed to cover (i.e. “cap”) or limit exposure to residual contamination at the property. Engineering controls include soil, asphalt or concrete cover systems over residual

contamination, and the use of fences. In some cases, contamination at depth can be “capped” by a newly constructed building or roadway.

Cleanup work can be incorporated into the general design and construction schedule to increase efficiency and lower costs. For example, if a building is planned over an area of contaminated groundwater that could pose an indoor air contamination problem, a sub-slab vapor removal system can be easily and inexpensively installed when the building’s foundation is being built.

Because the amount of cleanup needed can be highly dependent on the future use of the property, it is very important to thoroughly assess the property in the early planning stages of your project. The assessment information may allow you to design appropriate but cost effective cleanup options that can be incorporated into the redevelopment process.

Importance of Determining the Future Use of the Property

The redevelopment of a contaminated property is essentially a real estate transaction, and any real estate transaction is affected by location, location, location. A key question that must be answered for every property redevelopment project is, “Will a return on my investment be realized?” Knowing the cost of cleanup in advance will help you answer this question.

What constitutes a successful and protective cleanup has evolved over the past several decades from an expensive “remove it all” approach to a more measured, risk-based approach where low levels of contamination can be left on property if properly controlled. The risk-based approach recognizes that any cleanup must be protective of human health and the environment, but cleanup need only go as far as necessary to make the property safe for its intended use. For example, cleaning up a property for single family residential use is unnecessary if the property is to be used as a warehouse or convenience store. Your LSP will help you determine the appropriate level of cleanup based on the proposed reuse of the property.

So, the intended future use of a property can determine the extent of cleanup that will be required. It is just as true that the extent of cleanup can determine the future use of a property. Sometimes the intended use of a property is known from the beginning and the cleanup is tailored for that use. In other cases, available funding limits the extent of cleanup, which may then dictate more limited options for future use. The intended future use can significantly affect the cleanup both in scope and cost.

Completing a Cleanup in Accordance with the MCP

After a property has been cleaned up in accordance with the MCP, a Response Action Outcome (RAO) Statement (closeout statement) is filed with MassDEP that describes the level of cleanup that was conducted. Different categories of

RAO Statements apply depending on how much cleanup was done. Your LSP can help explain the different types of RAO Statements, and determine which is most appropriate for your property.

Liability Protection Available for Parties Conducting Cleanup

Under Chapter 21E, liability protection is available for certain parties if they meet statutory requirements. Municipalities, for example, are not considered owners/operators of properties when they foreclose on property subject to a tax lien, act diligently to divest themselves of the property, and meet other requirements of the law. Eligible persons, or non-causally responsible parties, may also receive liability protection once they complete a cleanup at a property. There is also protection under Chapter 21E for tenants, redevelopment authorities, downgradient property owners, non-profits, and other parties undertaking brownfield redevelopment projects.

Parties who are not eligible for liability protection directly under Chapter 21E may be able to get protection through a Covenant Not to Sue Agreement offered through the Office of the Attorney General. For more information on state liability protection, please refer to Appendix B.

Loans and Grants Available for Funding Cleanup

Lack of funding can be one of the biggest barriers to the cleanup of contaminated properties. EPA Brownfields Cleanup Grants are an excellent source of funding for cleanups conducted by municipalities and other qualifying entities. Since the grants are highly competitive and applications are accepted only once a year, your project timeline should have some built-in flexibility for these constraints.

More information about the Brownfields Cleanup Grant Program can be found at: http://www.epa.gov/brownfields/cleanup_grants.htm. Also refer to Appendix A for a list of other federal loan and grant programs.

The Commonwealth of Massachusetts is another potential source of cleanup funding. The largest source of cleanup funding at the state level is available through the Brownfields Redevelopment Fund (BRF) administered by MassDevelopment. Applicants can receive up to \$500,000 in loans to fund cleanup at properties located in Economically Distressed Areas. Municipalities may apply for up to \$2 million in assessment and cleanup



funding through the BRF Priority Project Fund. For more information on the BRF refer to Appendix B.

For more information on tools and financial resources to assist you with project planning and property identification, refer to Appendix A and Appendix B.

Determining Your Next Step

- Have you completed cleanup prior to redevelopment?
 - *If yes, go to Step 4, “The End of the Line – Redevelopment of Your Property!” for assistance in marketing or developing your property.*
- Have you have identified but not addressed all environmental concerns at the property, and do not intend to clean up the property prior to selling it?
 - *If yes, go to Step 4, “The End of the Line – Redevelopment of Your Property!” for assistance in marketing or developing your property.*
- Do your cleanup activities require institutional controls, such as an Activity and Use Limitation (AUL), and have they been appropriately filed and recorded according to the applicable statute and regulation?
 - *If yes, go to Appendix B, which provides contacts and information specific to MassDEP requirements.*
- If you know who the purchaser of the property will be, have you conveyed the content and responsibilities of the institutional controls to them?
 - *If yes, go to Step 4, “The End of the Line – Redevelopment of Your Property!” for assistance in marketing or developing your property.*
- If your property requires long-term maintenance, have you made plans to fund and carry out those obligations or made arrangements for others to do it on your behalf?
 - *If yes, go to Appendix B, which provides contacts and information specific to MassDEP requirements.*

Step 4: The End of the Line – Redevelopment of Your Property!

By working through Steps 1 through 3, you have quantified the environmental concerns at your property. You have either addressed those environmental concerns through cleanup and/or institutional controls, or you have documented them for a future developer. Assessment is complete; remedial actions were taken, or plans were developed for resolving unacceptable environmental risks. The property is ready for redevelopment.

Now that you have resolved the initial challenges associated with the environmental conditions at the property, you can turn your attention to the final steps. You may be marketing your now-clean property, trying to ensure a good

return on your investment, and doing your best to attract the right developer. In doing so, you will be facing the challenges inherent to any development project, such as providing appropriate infrastructure. But you also need to convince future buyers and occupants that the property is safe for their use.

If you have decided not to clean up the property yourself, you may be marketing it to a private developer for simultaneous cleanup and redevelopment. This is most likely to be successful when contamination at the property has been quantified and final cleanup costs can be determined with certainty.

You may be redeveloping the property yourself instead of seeking to sell it to a developer. In this case, return on investment may not necessarily be a primary driver, but you may still need to address infrastructure. You will also need to provide evidence to future occupants or users that the property is safe.

Depending on your plans for redeveloping the property, a variety of federal and state resources may be available to you. With answers in mind to the questions below, consider the FAQs listed below and the resources described in Appendices A and B.

- Do you plan to redevelop the property or do you plan to sell/market to a developer once the clean up has been completed?
- Will a public or private entity redevelop the property?
- Did you start this entire process with a planned, known reuse for the property, or are you still developing your reuse plans?
- Is your property in the heart of an urban center or in a rural setting?
- What infrastructure exists at the property? Does it need to be upgraded?
- Will the reuse be residential, commercial, industrial or open space?

Marketing your property

Local and state economic development staff can help you market your project. Coordinating with these representatives will help ensure success. Offering local incentives such as Tax Increment Financing (TIFs) can go a long way in attracting potential developers to a property. More information on the Massachusetts Economic Development Incentive Program (EDIP), including TIFs, can be found in Appendix B. Communities can also provide expedited local permitting to developers through Chapter 43D. This guarantees local permitting decisions on priority development sites within 180 days, and allows municipalities to access grants up to \$100,000 for staffing and consulting services. More information on Chapter 43D is located in Appendix B.

Please don't hesitate to contact your state agency experts at any point during the redevelopment process. Appendix B includes a complete list of state contact information. Best of luck with your brownfields project!



FAQs

If my property has an Activity and Use Limitation (AUL) or requires long-term operation and maintenance of remedial systems, how will this impact the marketing and redevelopment of the property?

If your property is safe for reuse but has an AUL, developers and occupants will need to be made aware that in certain areas of the property some uses are either prohibited (i.e., growing vegetables is not permitted) or require special consideration (i.e. excavation below 6 feet requires a soil management plan). Potential owners or occupants need this information so that they can safely use the property. Developers will also need to know if the property requires long-term operation and maintenance of remedial systems. These operations are property-specific but generally include periodic review and reporting of property conditions, operation of a remediation system, and payment of an annual fee.

(See also the FAQ on Institutional Controls, page 15.)

What information generated during the assessment and cleanup work will developers, lenders, and potential occupants request during the development stage, and how should the information be presented?

At a minimum, most developers, lenders and potential occupants will want to know the regulatory status of the property. They may also be interested in conducting a file review at one of MassDEP's regional offices to view all documentation related to the reported contamination at the property. You may also want to set up an information repository in a local library to facilitate review by developers.

What role, if any, will local, state or federal environmental staff have during the redevelopment phase?

The answer is highly dependent on property specifics, and the types of resources that will be used to assist in redevelopment. EPA New England and MassDEP brownfield staff are available to assist you in accessing funding and liability incentives, and to help you navigate the redevelopment process. See Appendix B for contact information.

How should I market this property?

There are tools available to assist you in marketing property to the right audience at little or no cost. One effective marketing tool is the Massachusetts Site Finder, an online service operated by the Commonwealth and its partners:

<http://www.massachusettsitefinder.com>. Assistance may also be available through your county or regional planning agency. A list of entities that maintain brownfield inventories can be found at <http://www.mass.gov/dep/cleanup/bflocct.htm>.

Lessons Learned

Since 1998, MassDEP has helped dozens of community groups and municipalities across Massachusetts successfully complete brownfields redevelopment projects. Based on that experience, we offer you four final tips for success as you prepare to begin your own redevelopment process.

Tip No. 1 – Establish and maintain a well-rounded brownfields redevelopment team

If your team does not already include local, state or federal economic development agency staff, look to the resources described in Appendix A and Appendix B and contact the agencies best suited to help with your project. If the property is contaminated, engage a Massachusetts Licensed Site Professional (LSP) early on in the process to help direct you through the state regulatory system. Also consider whether having an attorney experienced in brownfield redevelopment on the team would benefit the project.

Tip No. 2 – Establish clear goals

Work with your team to develop appropriate locally supported redevelopment goals for your property. The team's success in developing local support for a project will likely improve if local officials, citizens groups or individual citizens are on the team.

Tip No. 3 – Identify available tools

Use your redevelopment goals to identify and utilize appropriate tools throughout the process. Tools available at the federal and state level are located in Appendix A and Appendix B.

Tip No. 4 – Work to make your property “shovel-ready”

Based on the redevelopment goals for the property, identify and utilize the tools that will make your property ‘shovel-ready’ for development. A shovel-ready property is one where as many obstacles as possible have been cleared in advance of redevelopment. This is a critical step if you plan to market the property for sale prior to redevelopment since it will minimize regulatory hurdles for the potential developers.



APPENDIX A: National Resources

Please note that the resources referenced below are often implemented at the regional, state and local levels, so it is important to include regional, state and local economic development specialists in your brownfield redevelopment team.

U. S. Environmental Protection Agency Brownfield Program (EPA)

<http://www.epa.gov/brownfields/>

EPA provides grants to fund assessment and cleanup of brownfield properties. Grants are also made to capitalize revolving loan funds to clean up brownfield properties or fund job training programs.

THINK ABOUT...*using assessment grants to identify and prioritize Brownfield properties for redevelopment or quantifying the degree of cleanup needed to get the property “business ready”. Cleanup grants often need to be pooled with other cleanup funds unless the cleanup is minor. Non-profits such as urban renewal authorities are eligible recipients of cleanup grants.*

National Association of Development Organizations (NADO)

<http://www.nado.org/rf/innocenters/brown.php>

Since 2001, NADO has been dedicated to assisting regional development organizations across the country. Through their Research Foundation they have has sought to raise awareness and examine issues related to contaminated property revitalization and redevelopment in small metropolitan areas and rural America. They have released a series of documents, all of which are available on their website, that specifically address reclaiming such properties in rural America. Their resource guide is highly recommended reading for brownfield stakeholders and can be found at <http://www.nado.org/pubs/rguide04.pdf>.

THINK ABOUT...*using NADO to identify potential resources specifically targeted to smaller municipalities and rural communities.*

International City/County Management Association (ICMA)

<http://www.icma.org/main/topic.asp?tpid=19&hsid=10>

Since 1914, ICMA has offered a wide range of services to its members and the local government community. The organization is a recognized publisher of information resources ranging from textbooks and survey data to topical newsletters and e-publications. ICMA provides publications, data, information, technical assistance, and training and professional development to thousands of city, town, and county experts and other individuals on a variety of issues including redevelopment of contaminated properties.

THINK ABOUT...*using ICMA resource documents to gain additional knowledge on addressing and redeveloping contaminated properties.*

National Association of Local Government Environmental Professionals (NALGEP)

<http://www.nalgep.org/issues/brownfields/>

NALGEP represents local government personnel responsible for ensuring environmental compliance and developing and implementing environmental policies and programs. Their Brownfield Community Network frequently sponsors webcasts aimed at empowering localities to revitalize their communities through the exchange of strategies, tools, and best practices for brownfield cleanup and reuse.

***THINK ABOUT...**using NALGEP resources as a forum for exchanging lessons learned and expanding a community's knowledge base on a variety of redevelopment issues.*

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

<http://www.hud.gov/offices/cpd/economicdevelopment/programs/rc/resource/brwnflds.cfm>

HUD provides block grants and competitive awards (targeted to state and local governments) for revitalizing entitlement communities, offers federally-guaranteed loans for large economic development and revitalization projects, typically in entitlement communities, provides priority status for certain federal programs and grants for HUD-designated Empowerment Zone or Enterprise Communities (targeted to 80 local governments with low-income or distressed areas), and provides options for meeting safe and affordable housing needs in developed areas.

The six applicable HUD programs listed below provide resources for the renewal of economically distressed areas properties.

- Community Development Block Grant Program;
- Section 108 Loan Guarantee Program;
- Brownfield Economic Development Initiative;
- HOME Investment Partnership Program;
- Empowerment Zones and Enterprise Communities Initiative; and
- Lead-Based Paint Hazard Control Grant Program.

U.S. Department of Agriculture (USDA)

Forest Service

<http://www.fs.fed.us>

The Forest Service provides technical assistance for projects in selected areas (targeted to EPA grantee, local governments, federal Empowerment Communities and Enterprise Zones) and offers technical and financial assistance for sustainable redevelopment and reuse projects (targeted to state and local governments and community-based groups in Atlanta, Seattle, New York, Chicago, San Francisco, Los Angeles, Denver, Las Vegas, East St. Louis, South Florida (four county area), Philadelphia, Boston, and Buffalo).

Rural Development Agency (RDA)

<http://www.rurdev.usda.gov/>

USDA provides grant, loan, and loan guarantee assistance for a variety of business, commercial, and industrial projects in small towns and rural areas, supports the installation and improvement of critical infrastructure needed to support economic development, and helps finance the construction of key public facilities, e.g., sewer systems, firehouses, etc., that can support property revitalization efforts.

***THINK ABOUT...**using USDA/RDA resources to meet various project needs within the context of small town or rural needs --real estate acquisition, cleanup, demolition, working capital, water and sewer system improvements, supportive community facilities.*

U.S. Department of Commerce Economic Development Administration (EDA)

<http://www.eda.gov/Research/Brownfields.xml>

EDA funds infrastructure enhancements in designated redevelopment areas or economic development centers that serve industry and commerce, provides planning grants, offers revolving loan funds and loan guarantees to stimulate private investments.

***THINK ABOUT...**using EDA to address cleanup and site preparation needs at reviving industrial areas...street, utility, port, and other infrastructure needs at project sites...property revitalization planning and property marketing.*

Small Business Administration (SBA)

<http://www.sba.gov>

SBA provides information and other non-financial technical assistance for redevelopment efforts, offers loan guarantees to support small businesses, and assists in developing management and marketing skills.

***THINK ABOUT...**using loan guarantees to attract capital to small businesses once properties are clean...using CDCs to help underwrite and finance building expansions or renovations...using informational resources available to help with loan documentation and packaging.*

U.S. Department of the Interior National Park Service (DOI)

http://www.nps.gov/rtca/whatwedo/recent_innovations/wwd_ri_groundwork.html

DOI provides technical assistance for planning, assessment, and conservation in urban areas, assists in acquisition of surplus federal lands, and offers technical assistance for community revitalization.

***THINK ABOUT...**enhancing redevelopment projects with parks and open space amenities.*

U.S. Department of Justice (DOJ)

Weed and Seed Program

<http://www.ojp.gov/ccdo/ws/welcome.html>

DOJ's Brownfields Special Emphasis Initiative gives communities unsuccessful in seeking EPA funding a "second chance" to carry out initiatives aimed at site preparation and development, and community outreach and participation (targeted to Weed and Seed program grantees), advises and assists with the use of EPA Brownfields funds to clean up meth labs, and assists in crime prevention and improving the community climate through neighborhood restoration and crime prevention.

***THINK ABOUT...**plugging key community involvement, reuse planning, cleanup, and project development financing gaps when other funding sources fall through...using community outreach services to address property and neighborhood safety issues that can stigmatize contaminated properties.*

U.S. Department of Labor (DOL)

<http://www.doleta.gov>

DOL offers technical assistance linked to job training and workforce development in Brownfields Showcase Communities.

***THINK ABOUT...**using training and workforce development services as a cash flow offset incentive to companies locating at Brownfields properties.*

U.S. Department of Transportation Federal Transit Administration (DOT)

http://www.fta.dot.gov/funding/grants_financing_263.html

DOT provides grants for transit capital and maintenance projects, offers discretionary capital grants for new fixed guideway transit lines, bus-related facilities, and new buses and rail vehicles, funds transportation and land-use planning, and promotes delivery of safe and effective public and private transportation in non-urban areas.

***THINK ABOUT...**enhancing property marketability with transit access...planning for and cleaning up properties used for transportation purposes...identifying contaminated properties for stations, lots, and other transit purposes.*

U.S. Department of Transportation Federal Highway Administration (FHWA)

http://www.fhwa.dot.gov/environment/bf_disc.htm

FHWA provides funds that can be used to support eligible roadway and transit enhancement projects related to property redevelopment, targeted to state and local governments and metropolitan planning organizations.

***THINK ABOUT...**using FHWA resources to cover some cleanup, planning and/or development costs, freeing up resources for other purposes...reconfiguring or modernizing roads or other transportation infrastructure to make them more complementary to property reuse opportunities, or to provide transportation related access or amenities that enhance property value.*

U.S. Department of Treasury Oversight of various tax incentives

<http://www.treas.gov/press/releases/po3060.htm>

The Department of Treasury offers tax incentives to leverage private investment in contaminated property cleanup and redevelopment targeted to private sector entities.

***THINK ABOUT...**promoting the cash flow advantages of tax incentives...promoting the financial and public relations advantages of participating in contaminated property redevelopment to lenders...tapping into programs to expand capital access for small businesses that could locate at a redevelopment site.*

Federal Housing Finance Board (FHFB)

<http://www.fhfb.gov/Default.aspx?Page=44&Top=3>

FHFB funds community-oriented mortgage lending for targeted economic development funding. Funds are targeted towards a variety of property users and can be accessed through banks. FHFB subsidizes interest rates and loans to increase the supply of affordable housing and funds the purchase of taxable and tax-exempt bonds to support redevelopment.

***THINK ABOUT...**using FHFB to attract more lenders to specific cleanup and redevelopment projects.*

General Services Administration (GSA)

http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_OVERVIEW&contentId=10033&noc=T

GSA works with communities to determine how underused or surplus federal properties can support revitalization.

***THINK ABOUT...**incorporating former federal facilities into larger projects, to take advantage of site assessment resources.*

National Oceanic and Atmospheric Administration (NOAA)

<http://brownfields.noaa.gov/htmls/about/siteindex.html>

NOAA provides technical and financial assistance for coastal resource protection and management, funds workshops in Showcase Communities on contaminated property redevelopment-related coastal management issues, and coordinates a new “Portfields” initiative (initially targeted to port areas in New Bedford, MA, Tampa, FL, and Bellingham, WA).

***THINK ABOUT...**planning for a revitalized waterfront and restoring coastal resource...linking port revitalization needs with broader economic development purposes...linking site design needs at contaminated waterfront properties to end use planning.*

U.S. Department of Defense Army Corps of Engineers (USACE)

<http://hq.environmental.usace.army.mil/programs/brownfields/brownfields.html>

USACE executes projects emphasizing ecosystem restoration, inland and coastal navigation, and flood and storm damage reduction that may be contaminated property-related, and provides technical support on a cost-reimbursable basis to federal agencies for assessment and cleanup activities.

***THINK ABOUT...**requesting assistance from the Corps for project planning in waterfront situations...defining Corps-eligible projects like riverbank restoration can enhance property revitalization efforts.*

U. S. Department of Defense (DOD)

Office of Economic Adjustment

<http://www.oea.gov/>

DOD provides extensive information on redevelopment of closed military base properties. Models developed may be useful to other types of contaminated property and community stakeholders.

Office of Energy Efficiency and Renewable Energy/Center of Excellence for Sustainable Development

<http://www.smartcommunities.ncat.org/>

This DOE office serves as a resource center on sustainable development, including land use planning, transportation, municipal energy, green building, and sustainable businesses.

Office of Building Technology, State and Community Programs (BTS)

www.eren.doe.gov

BTS works with government, industry, and communities to integrate energy technologies and practices to make buildings more efficient and communities more livable. The resources available through BTS can help ensure that contaminated property cleanups are connected to energy efficiency and sustainable redevelopment.

Tax Increment Financing: A Brief Overview

One approach to financing the cleanup and redevelopment of contaminated properties is the creation of a tax increment financing (TIF) district. TIF is a financing technique wherein bonds are issued to fund redevelopment and the bondholders are repaid through the new or incremental tax revenues generated by new construction/development. Usually, urban renewal authorities and downtown development authorities have the ability to create a TIF district.

For example, suppose a municipality creates a TIF district to facilitate redevelopment of several adjacent properties, including aging and vacant industrial buildings and former rail yards. Once the properties within the TIF district are redeveloped, property values will increase, which results in increased tax revenues. Property tax revenues from the TIF district are split into two revenue streams:

1. The first stream (base) is equal to the “As-Is” property tax revenues without redevelopment and goes to the same city, county, school district, and other taxing entities (the base is allowed to increase with the market over time).
2. The second stream (increment) is the net increase in property taxes resulting solely from new development. The increment can be used to fund the redevelopment through Tax Increment Financing, which diverts the increment revenues to pay for annual debt service on construction bonds.

For more information on the Massachusetts Economic Development Incentive Program (EDIP) and related TIF financing, refer to Appendix B.

Energy and Mineral Severance Taxes: A Brief Overview

Energy and mineral severance taxes are excise taxes on natural resources “severed” from the earth. They are measured by the quantity or value of the resource removed or produced. In the majority of states, the taxes are applied to specific industries such as coal or iron mining and natural gas or oil production. They are usually payable by the severer or producer, although in a few states payment is made by the first purchaser. When production rates of minerals and energy are high these funds can grow to significant amounts.

As of 2005, 39 of the 50 states had some form of severance taxes. Naturally, the use of these funds varies from state to state so check first to see how these funds can be applied in your state. Application and eligibility procedures also vary from state to state.

APPENDIX B: Massachusetts Resources

MassDEP serves as an important first point of contact for private developers, municipalities, and non-profits interested in resolving regulatory issues associated with a contaminated property prior to redevelopment.

Privatized Waste Site Cleanup Program

The privatized Waste Site Cleanup Program in Massachusetts streamlines the cleanup process by allowing cleanup activities to be overseen by Licensed Site Professionals (LSPs). This program has greatly expedited the rate of cleanup at brownfield and other contaminated properties by allowing parties to undertake cleanup activities at their own pace. The privatized cleanup program also allows parties to take the planned future reuses of properties into consideration during cleanup design, which can result in significant savings in time and costs.

Technical Assistance

The initial phases of a successful brownfield redevelopment project require up-front resolution of environmental issues. MassDEP serves as an important first point of contact for private developers, municipalities, and non-profits interested in resolving regulatory issues associated with a property prior to redevelopment. MassDEP has established brownfield points of contact in its Boston and regional offices to help address technical issues related to these projects, and connect parties with financial and liability incentives that can be critical to their success. Brownfield contacts are online at <http://www.mass.gov/dep/cleanup/bfcont.htm> and at the end of this Appendix.

Interagency Partnerships

Coordination among state and federal agencies administering brownfield programs has proven critical to the success of the Commonwealth's brownfield initiative. In 2002, MassDEP established a Brownfield Partners Group that brings together key federal and state agencies on a monthly basis to collaborate on related projects and issues. Through MassDEP's continued lead and coordination, closer working relationships between economic development, environmental, transportation, housing, and other agencies have developed through this group. This has resulted in a multi-agency, collaborative effort that has led to the successful redevelopment of many brownfield properties throughout the state.

MassDEP and its partner state agencies offer a variety of resources for parties who are interested in redeveloping brownfields and other contaminated properties:

Assessment and Cleanup Resources

Massachusetts Department of Environmental Protection (MassDEP)

<http://www.mass.gov/dep>

Limited funding is available through MassDEP for brownfield-related activities:

Clean Water State Revolving Fund (SRF): The SRF Program provides subsidized interest (2%) 20-year term loans for projects that protect or improve water quality. Any Massachusetts municipality may apply and compete for this financing, during the annual solicitation period, which normally runs from June through mid-August. Brownfield remediation projects are eligible for CWSRF financing, provided that the municipal proponent can demonstrate an anticipated water quality benefit to the work. For more information: <http://www.mass.gov/dep/water/wastewater/cwsrf>.

Assessment/Cleanup Grant of Service: MassDEP has limited funding through EPA to perform site assessments and cleanups at brownfield properties on behalf of municipal and non-profit entities. MassDEP uses state contractors to do this work rather than granting this funding directly to the community or non-profit. For more information contact Catherine Finneran, Brownfield Coordinator (contact information is below).

Technical Assistance Grants: MassDEP offers grants of up to \$10,000 that are competitively awarded to selected communities and citizen groups to provide expert advice and public education about hazardous waste site cleanup activities. Typically these grants are used by communities to monitor cleanup activities being conducted by private parties. For more information: <http://www.mass.gov/dep/cleanup/tagnote.htm>.

Massachusetts Development Finance Agency (MassDevelopment)

<http://www.massdevelopment.com>

MassDevelopment offers a variety of financial tools and technical assistance that can help brownfield redevelopment and other development projects move forward.

Brownfield Redevelopment Fund (BRF): The Massachusetts Brownfield Act (1998) established the BRF to provide low interest loans for site assessment and cleanup to public and private sector parties. Administered by MassDevelopment, available funding includes:

- Site assessment funding up to \$100,000
- Remediation funding up to \$500,000
- Remediation and site assessment funding up to \$2 million for projects designated as "Priority Projects"

To qualify for BRF funding, a project has to be located in an Economically Distressed Area (or EDA: a list of current EDAs is available at <http://www.mass.gov/dep/cleanup/eda.htm>), and the applicant must be an 'eligible person' (see <http://www.mass.gov/dep/cleanup/bfhdout2.htm>). For more information: http://www.massdevelopment.com/financing/lg_brownfields.aspx

Massachusetts Business Development Company (MassBusiness)

<http://www.mass-business.com>

Remediation Loan Program: MassBusiness offers a Remediation Loan Program to assist in the cleanup of brownfield properties. These loans of \$500,000 to \$2 million can be used to finance cleanup costs, regulatory compliance costs, site preparation and entitlement, demolition, construction, mortgage financing and various soft costs. For more information: <http://www.mass-business.com/site/site-massbiz/content/remediation-loan-program/>

Massachusetts Department of Housing and Community Development (DHCD)

<http://www.mass.gov/dhcd/>

The Massachusetts DHCD is the administering agency for the U.S. Department of Housing and Urban Development (HUD) State Community Development Block Grant (CDBG) Program, and serves cities and towns with populations under 50,000. It funds activities that will benefit low and moderate income persons, prevent slum and blight or respond to urgent/critical community needs. There are three components that can be used for brownfield projects.

Community Development Fund: Provides grants to municipalities for planning, pre-development studies, property acquisition, site assessment, cleanup, demolition, and other activities.

Mini-Entitlement Program: Provides grants to municipalities designated as "Mini-Entitlements" for activities including planning, pre-development studies, property acquisition, site assessment, cleanup and demolition.

Economic Development Fund: Provides grants to municipalities to support job creation. Eligible activities include: planning, pre-development studies, property acquisition, site assessment, cleanup, demolition and other activities. Businesses can be eligible for loans or grants through municipalities for real estate acquisition, and other related activities.

DHCD also administers other programs that can be used for brownfield projects:

Community Development Action Grant: CDAG provides funding for publicly owned or managed projects that will have a significant impact on the economic condition of a city or town, including activities that will leverage significant private investment and generate or retain long term employment, as well as projects that will significantly improve the conditions of low and moderate

income persons through the support of workforce housing production and/or the preservation of public housing. CDAG can be used in a variety of ways, including installation, improvement, construction, repair, rehabilitation or reconstruction of publicly owned or managed buildings or other structures, facades, streets, roadways, thoroughfares, sidewalks, rail spurs, utility distribution systems, water and sewer lines, for site preparation and improvements, demolition of existing structures, and relocation assistance.

Priority Development Fund - Planning Assistance Grants: Provides grants up to \$50,000 to assist municipalities with planning, zoning, education and outreach leading to housing production. Many communities use these funds to hire consultants to prepare exciting plans in an effort to spark the development of housing. Priority is given to strategies that encourage housing production on city or town center, brownfields, underutilized commercial or industrial land, or part of a transit-oriented development.

Massachusetts Department of Revenue

<http://www.mass.gov/dor>

Underground Storage Tank (UST) Program: The MassDOR Underground Storage Tank (UST) Program offers limited funding to cities and towns for activities related to leaking USTs, closure of fuel storage tanks, and other activities. For more information: <http://www.mass.gov/dor> and search for “Underground Storage Tank Program (UST)”

Executive Office of Housing and Economic Development (EOHED)

<http://www.mass.gov>

MORE Program: EOHED's Massachusetts Opportunity Relocation and Expansion (MORE) program offers competitive grants to municipalities that partner with private developers to improve infrastructure for projects that create jobs. Although site assessment cannot be funded through MORE, site remediation and preparation work that is tied to infrastructure improvements is eligible for funding. For more information: <http://www.mass.gov> and search for “More Jobs Capital Program”

Executive Office of Energy and Environmental Affairs (EOEEA)

<http://www.mass.gov/envir>

EOEEA administers incentive programs that may be used directly or indirectly for brownfield redevelopment projects that support smart growth. These include:

Commonwealth Capital: Municipalities complete self-assessment scorecards, which assess the smart growth consistency of local regulations and planning. The resulting Commonwealth Capital score is worth 30% of evaluation points for over 20 state grant programs.

Self Help/Urban Self Help: Self Help grants provide financial assistance to city and town conservation commissions to acquire critical open space. The open space must be used for conservation or passive recreation purposes. Urban Self Help grants assist cities and towns in acquiring, developing and renovating park and outdoor recreation facilities.

Executive Office of Transportation (EOT)

<http://www.mass.gov/eot>

EOT offers funding programs that can be used for brownfield projects involving infrastructure improvements and transit oriented development.

Public Works and Economic Development (PWED): The PWED Program promotes economic development through improvements to streets, sidewalks and other specified infrastructure. Eligible activities include design, construction and/or reconstruction of existing and/or newly relocated streets, sidewalks and related infrastructure. For more information: <http://www.eot.state.ma.us/downloads/grants/PWEDguide.doc>

Transit Oriented Development (TOD) Program: The TOD Program offers capital grants to design and build four types of projects within one-quarter mile of a transit station: housing, parking, pedestrian improvements and bicycle facilities. Twenty-five percent (25%) of the units in any housing project must be affordable. The Program also makes awards for preliminary design (25%) of bicycle and/or pedestrian facilities. Applicants must be public entities but may involve public-private partnerships.

State Subsidized Environmental Insurance

Massachusetts Business Development Company (MassBusiness)

<http://www.mass-business.com>

Brownfield Redevelopment Access to Capital Program (BRAC): The Brownfield Act of 1998 created the BRAC Program, which backs loans with state subsidized, volume discounted environmental insurance. The BRAC Program offers Cleanup Cost Cap, Pollution Legal Liability, and Secured Creditor coverage that provide protection for the borrower against unanticipated costs that arise in a brownfield cleanup project.

Massachusetts subsidizes the premium of this insurance up to 50%. MassBusiness and the Massachusetts Department of Business Technology administer this program. ACE, AIG, Chubb and XL are the selected insurance carriers. For more information: <http://www.mass-business.com/site/site-massbiz/content/brownfields/>

Tax Incentives

Massachusetts Department of Revenue

<http://www.mass.gov/dor>

Brownfield Tax Credit Program: The program offers a tax credit of up to 50% of cleanup costs in the tax year after a cleanup is completed, and 25% for a cleanup that uses an Activity and Use Limitation (AUL). The party taking the credit must be an eligible person and the project must be located in an Economically Distressed Area. In 2006, the deadline for eligible cleanup costs was extended to January 1, 2012. In addition, the tax credit may now be transferred, sold or assigned to another eligible person or to a nonprofit organization. For more information go to: <http://www.mass.gov/dor> and search for “Brownfields Credit for Rehabilitation of Contaminated Property”

Municipal Tax Abatement Program: The program allows municipalities to negotiate back taxes, including interest, with developers undertaking brownfield projects. A municipality must adopt a by-law before negotiating agreements with developers.

Massachusetts Office of Business Development (MOBD)

<http://www.mass.gov/mobd>

Economic Development Incentive Program (EDIP): EDIP offers tax and other incentives to attract new businesses in targeted areas. The following benefits are available under this program:

- 5% Investment Tax Credit
- 10% Abandoned Building Tax Deduction
- Local real estate tax incentives such as Tax Increment Financing (TIF) or Special Tax Assessment (STA)

Eligible sites must be located in a state designated Economic Target Area (ETA).

For more information on EDIP: <http://www.mass.gov/>
Search for “Economic Development Incentive Program (EDIP)”

For more information on the location of ETAs:
<http://www.mass.gov/Eoed/images/map/ETA-SM.pdf>

Massachusetts Historical Commission

<http://www.sec.state.ma.us/mhc>

Historic Rehabilitation Tax Credit: A 20% tax credit is available for projects on the state Register of Historic Places that meet eligibility requirements. Brownfields such as old mills may qualify. For more information: <http://www.sec.state.ma.us/mhc/mhctax/taxidx.htm>

Liability Relief

Massachusetts Department of Environmental Protection (MassDEP)

<http://www.mass.gov/dep>

The Brownfield Act (1998) established statutory liability relief for parties undertaking brownfield projects. Parties interested in determining if they are eligible for this protection should refer to Chapter 21E Chapter 2, and consult with an attorney with expertise in liability relating to oil/hazardous material releases. For more information on Chapter 21E Chapter 2: <http://www.mass.gov/legis/laws/mgl/21e-2.htm>

The Brownfield Act provided liability protection for several stakeholders:

"Eligible" Owners and Operators: Limits liability for "eligible persons" once they meet MassDEP's cleanup standards for oil or hazardous material releases. Defines "eligible person" as an owner or operator who did not own or operate the property at the time of the release and who did not cause or contribute to the contamination at the property. Once a permanent solution or Remedy Operation Status is achieved, an eligible person is protected from Commonwealth claims for response action costs and from claims by third parties for contribution, response action costs and property damage under Chapter 21E and property damage under common law.

Downgradient Property Owners: Exempts certain owners and operators from liability for contamination that has migrated onto their property, provided they meet certain requirements specified in the law.

Tenants: Exempts certain tenants from operator liability if their tenancy began after the release was reported to MassDEP, if they did not cause or contribute to the contamination, and meet other requirements specified in the law.

Redevelopment Authorities and Community Development Corporations (CDCs): Exempts redevelopment agencies and authorities, CDCs, and Economic Development and Industrial Corporations (EDICs) from liability as long as they acquired the property after August 5, 1998 and meet other requirements specified in the law.

Secured Lenders: Replaces the "participation in management" liability standard with a causation standard and deletes the 5-year limit on the exemption after the secured lender takes ownership or possession of the property, provided they seek to divest of the property and meet other requirements specified in the law.

Office of the Attorney General

<http://www.ago.state.ma.us/>

Brownfield Covenant Not to Sue Program (CNTS): The CNTS program provides liability protection for projects where the statutory eligibility protection described above does not apply. Owners who caused the contamination at a property who are selling their property can get liability protection through this program. Parties undertaking a cleanup that can only reach a temporary cleanup can also get protection. For more information: <http://www.ago.state.ma.us> and search for "Covenant Not To Sue".

Expedited Permitting

The Department of Business and Technology

<http://www.mass.gov>

Search for "Department of Business and Technology"

The Chapter 43D Program creates a transparent and efficient process for municipal permitting by guaranteeing local permitting decisions on priority development projects within 180 days. The law is a local option, and in order to be effective must be authorized by a majority vote by Town Meeting or City/Town Council. Once local approval is granted municipalities can offer grants up to \$100,000 for staffing assistance and consulting services. For more information: <http://www.mass.gov> and search for "Chapter 43D Expedited Permitting"

Brownfields Contact Information

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Southeast Regional Office - Ellie Grillo

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MA Environmental Justice and Brownfield Program/Executive Office of Energy & Environmental Affairs (EOEEA)

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MA Brownfield Redevelopment Access to Capital Program

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<http://www.mass-business.com/site/site-massbiz/content/brownfields/>

MA Brownfield Redevelopment Fund

MassDevelopment

1-800-445-8030

<http://www.massdevelopment.com/>

MA Brownfield Tax Credit

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MA Brownfield Covenant Not to Sue Program

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Department of Housing And Community Development Funding (DHCD)

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MA Economic Development Incentive Program (EDIP)

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Search for “Economic Development Incentive Program (EDIP)”

MA Executive Office of Economic Development MORE Program

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Search for “MORE Jobs Capital Program”

US Environmental Protection Agency Brownfields Program – New England Region

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US Department of Housing and Urban Development Funding – New England Region

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Brownfields Success Stories

MASS MoCA, North Adams

Site History:

More than one hundred years of industrial history were made where two branches of the Hoosic River meet in downtown North Adams. Originally used for purposes ranging from shoemaking to iron forging, the riverfront site was bought by textile manufacturer Arnold Print Works in 1860. The company expanded rapidly by supplying the US Army during the Civil War, and by 1905 almost 3,200 people worked at its 13-acre facility. When Arnold Print moved out in 1942 after struggling through the Depression years, the site was purchased by the Sprague Electric Company, a manufacturer of electronic components for the US military. Sprague Electric flourished during WWII and the Cold War, employing up to 4,100 workers in a town of only 18,000. Unable to compete with low-priced components made overseas, Sprague ceased operations at North Adams in 1985, devastating the local economy and leaving behind decades of industrial contamination.



Environmental Solutions:

MassDEP became involved at the site even before Sprague Electric ceased operations. Site investigation following a tank spill in 1983 revealed contamination by polychlorinated biphenyls (PCBs) and trichloroethylene. Sprague's environmental consultant, HMM Associates, Inc., began remediation work in 1989 by removing 600 tons of soil and debris impacted by volatile organic compounds and heavy metals. A 1990 risk assessment determined that all aboveground facilities in the northern portion of the site posed no significant risk to human health or to the environment. In the early 1990s, more than 400 tons of PCB-contaminated soil and loading dock materials were removed from the southern area of the parcel and disposed of at off-site landfills. A 20,000-square foot cap was constructed to isolate the remaining contaminants. In the late 1990s, the City of North Adams obtained a Brownfields Assessment grant from EPA, which was used by new consultant Blasland, Bouck & Lee to investigate groundwater and additional soil contamination. Two contaminated buildings were demolished in 2003. Though cleanup and assessment work is ongoing in some parts of the site, the historic mill buildings are safe for most uses.

Redevelopment:

Within a year after Sprague Electric's closing, local academic, political and business leaders embraced the idea of transforming the historic industrial site into

a contemporary arts center. The Massachusetts Legislature agreed to support the project in 1988, and by the early 1990s site planning was underway for the Massachusetts Museum of Contemporary Art, or MASS MoCA. The \$31.4 million museum – supported by \$22 million in state funds – was opened in 1999. Its 19 galleries total more than 100,000 square feet of exhibition space, in addition to 40,000 square feet of performance areas, support facilities and artist workspace. A second phase of redevelopment added 60,000 square feet of office and retail space to the museum site in 2003, using close to \$12 million in state and federal grants and loans. Today, MASS MoCA hosts more than 120,000 visitors annually, and 350 people are employed at the former Sprague campus. After more than a decade of work, the disappointment of Sprague Electric's closing has been transformed into a magnet for tourism, culture and commerce in western Massachusetts.

North Common Sites, Lawrence

Site History:

Only a few blocks from the industrial heart of Lawrence, the North Common neighborhood has been home to generations of blue-collar workers and immigrants. When the city's manufacturing base declined beginning in the 1920s, many homes and businesses in the densely built area were abandoned, leaving behind contaminated sites and creating opportunities for illegal dumping of waste. Quality of life in the neighborhood was diminished. Working in partnership with the City of Lawrence, two local community groups – Lawrence CommunityWorks and Groundwork Lawrence – initiated efforts to redress the situation by redeveloping local vacant lots as affordable housing and open space.

Environmental Solutions:

The community groups selected two contaminated North Common sites for redevelopment as part of a larger vision for neighborhood renewal. In 2005, more than \$90,000 from MassDevelopment's Brownfields Redevelopment Fund provided crucial gap funding for assessment and remediation of five vacant lots at the corner of Union and Mechanic Streets. Lead and other hazardous materials were found in very low concentrations, which allowed contractors to file a permanent closure for the site without doing cleanup work.



Two blocks away on Brook Street, the 2.7-acre riverfront site of a former industrial laundry required a more involved cleanup process. Site assessment revealed the presence of petroleum hydrocarbons and other contaminants in both soil and groundwater. Beginning in 2003, DBT Corporation, trustee for the site's

former owner, funded over \$1.5 million in assessment and remedial work. Approximately 2,250 cubic yards of contaminated soil and a concrete slab were removed from the site. DBT received liability protection through a Covenant Not to Sue from the Massachusetts Attorney General's office while cleanup work was being conducted. In 2005, the company's consultants filed for a permanent closure under state cleanup regulations, allowing the site to be redeveloped for use as a park. The City of Lawrence took ownership of the site from DBT after cleanup was complete.

Redevelopment:

Cleanup of these two sites resulted in significant benefits to the North Common neighborhood. At Union and Mechanic Streets, CommunityWorks and Groundwork Lawrence used \$30,000 from the Office of Coastal Zone Management to design and implement an integrated plan for affordable homes and an adjacent 3,800-square foot community garden. The development incorporates rain gardens and selective grading techniques to minimize its demands on Lawrence's sewer system. MassHousing contributed nearly \$180,000 to help build the first five housing units, which were completed in 2006.

The Brook Street site was redeveloped in the summer of 2006 as part of the Spicket River Greenway, an evolving network of riverfront parks and trails. Now known as Dr. Nina Scarito Park, the site offers walking paths and open lawns, picnic areas, a community garden, a basketball court and playgrounds, enhancing quality of life in one of Lawrence's most densely populated and historically underserved neighborhoods. DBT Corporation and Bank of America contributed \$200,000 toward construction of the park, and an early commitment of \$50,000 from EPA's Brownfields Supplemental Assistance program provided critical funding for park design. These funds were matched by a \$325,000 grant from the Executive Office of Environmental Affairs' Urban Self-Help program and by funding from the City of Lawrence's CDBG program, which supported park construction.

Alden Corrugated, New Bedford

Site History:

The Alden Corrugated Container Company manufactured cardboard boxes and paper products in downtown New Bedford from 1947 to 1991 on a site that had been occupied by textile manufacturer Taber Mills earlier in the century. After the plant was abandoned in the early 1990s, the City of New Bedford acquired the 4-acre property for non-payment of taxes. In 1995, the abandoned facility suffered a devastating fire and was demolished, leaving large quantities of demolition debris in the former factory's basement, and exposing the surrounding residential neighborhood to a vacant contaminated site. Four large underground storage tanks (USTs) holding petroleum products were largely untouched by the fire.

Environmental Solutions:

In 1999, the City of New Bedford was awarded an EPA New England Targeted Brownfields Assessment grant of service worth \$65,000 and a follow-up Brownfields Assessment grant of \$63,000 for use at Alden Corrugated. Assessment activities indicated that soil and demolition debris at the site were contaminated with polycyclic aromatic hydrocarbons and lead. Working closely with MassDEP staff, city contractors removed roughly 30,000 cubic yards of contaminated soil and debris to a local permitted landfill for a cost of \$500,000. Because of the site's location in a low-income neighborhood with many elderly residents, MassDEP and the Executive Office of Energy and Environmental Affairs contributed to the cleanup through an \$80,000 Environmental Justice grant of service. In 2003, the state's contractor removed the four USTs and more than 20,000 gallons of mixed oil and water, allowing redevelopment efforts to proceed without complications from the tanks.

Redevelopment:

The City of New Bedford subdivided the site into several parcels to facilitate redevelopment. The half-acre northern lot was sold to an abutting business that was interested in expanding its operations. The 2.8-acre center lot was sold to Sid Wainer & Son Co., an international specialty foods company that is headquartered in the city. In 2004, the company built three 3,000-square foot greenhouses on the property, which are used to grow specialty warm-weather vegetables and to conduct research in sustainable urban agriculture. Produce from the facility is shipped via a rebuilt railroad siding, which also is used by other local companies. The greenhouse project contributes nearly \$4,000 a year in property taxes to the City of New Bedford.



Saint Vincent Hospital, Worcester

Site History:

In 1992, two of the largest health care providers in Worcester teamed to build a \$200 million integrated health facility on a 24-acre site near Interstate 290. The project area was comprised of 32 parcels containing abandoned commercial and industrial structures, 8 roadways, and several non-profit providers and empty lots that were part of the East Central Urban Renewal Area, an economic opportunity zone that had been established 25 years earlier. The city acquired the sites through eminent domain and initiated cleanup and site preparation activities in partnership with MassDEP, MassHighway, the Worcester Redevelopment Authority and California-based Tenet Healthcare Company.

Environmental Solutions:

MassDEP's Central Regional Office worked closely with the City of Worcester and other project leads on predevelopment activities that included demolition and asbestos removal, relocation of rail lines, and site grading. The Mill Brook sewer, a combined sewer that carried both storm-water and sewage, had to be relocated.



The project area consisted of seven hazardous waste sites with complex contamination, multiple exposure pathways and high public visibility. Soil and groundwater were contaminated with chlorinated solvents, polychlorinated biphenyls, total petroleum hydrocarbons and metals. The quantity of soil treated or removed exceeded 20,000 tons.

Redevelopment:

This project resulted in the development of a nine-story, 350-bed medical facility in downtown Worcester, known as Saint Vincent Hospital. Several major changes were made to the local infrastructure to accommodate this development, including building a separate highway ramp to service the facility, rerouting an underground culvert for the Blackstone River and installing a new sewer system.

The city has estimated that the project will provide close to \$2 billion in economic benefit over the next 20 years, with 1.5 million visitors annually. 1,000 new construction jobs were created and 2,400 jobs were relocated to Worcester's downtown.

Project proponents obtained liability protection under the pre-1998 Covenant Not to Sue Program. This program was an early version of the Brownfields Covenant Not to Sue Program created through the Brownfields Act.



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