

Toolbox

For Community Redevelopment



A beginner's guide to contaminated property redevelopment.

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ASTSWMO, Providing Pathways to Our
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2017 Toolbox for Community Redevelopment

This toolbox is an update of the toolbox that was produced by our ASTSWMO counterparts in 2007. Recognizing its value as a resource, the current ASTWMO Brownfield Focus Group set out to update the toolbox to reflect new procedures, information and resources. This document does not establish any official opinions, positions, preferences or recommendations by ASTSWMO or by individual ASTSWMO members or their respective State or region.

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Toolbox Introduction

Does your community have properties that are sitting vacant and unused due to real or suspected environmental contamination? Have portions of your town that were once vibrant become blighted, creating economic, social and environmental issues? While these contaminated properties may be problematic, the good news is States have a variety of response programs including brownfields, voluntary cleanup, landfill cleanup programs, underground storage tank programs, etc., that can help communities redevelop these problem properties. This toolbox will provide the basics needed to navigate the redevelopment process and access resources to assist with revitalization efforts.

How to Use This Document

This toolbox provides a framework for successful project implementation. The toolbox is comprised of five steps, where each corresponds to a step in the redevelopment process. Keep in mind, the contaminated property redevelopment process can sometimes be an iterative process and you may have to revisit certain steps.

Throughout the document, there are references to federal tools that are available nationwide. In Appendix A, “Tips for Resource Identification” provides a link to a list of the State brownfield programs. We advise you to contact your State brownfield program to identify services and resources that can assist with your specific projects.

Finally, the toolbox contains a list of useful documents and resources that provide you with additional information you can use to better understand the issues and terminology often encountered during the assessment, cleanup and redevelopment process.

The Five-Step Contaminated Property Redevelopment Process

The toolbox breaks the redevelopment process into five 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: How your State’s program can help when a property is contaminated

Step 5: The end of the line—redevelopment of your property

Each of these steps will be addressed by an individual section of this toolbox.



Step 1: Property Identification and Project Planning

When dealing with properties with an environmental past, communities must have a vision for redevelopment. Determining an end use for a property or an area may influence your cleanup strategy and goals, funding sources you access and partners you bring to the table. This section will cover some of the activities that your community may want to undertake in order to prepare for redevelopment. Never underestimate the importance of this step.

What properties should a community target with the aid of this toolbox?

Most of us can easily identify properties that are blighting our landscapes. This toolbox will help a community address the properties that need some sort of environmental assessment and/or cleanup. If a property has a history of use, there is the potential that there may be some form of contamination on the property.

Many of these properties are considered brownfields, which are properties that are not being used or not being used to their full potential because of contamination or the possible presence of contamination. Brownfields can include, but are not limited to, abandoned gas stations, old factory and mill complexes, foundries, junkyards, mine-scarred lands, old solid waste landfills and other underutilized or abandoned properties. Bear in mind that some commercial properties may have little or no contamination. Not all properties are heavily contaminated and difficult to redevelop. Many times, perception is worse than reality.

Experience has shown that successful contaminated property redevelopment comes in many forms and that each community has its own unique opportunities and revitalization 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 revitalization plan for multiple properties or if you plan to redevelop just one contaminated property, successful project planning must consider the resources available for environmental investigation and cleanup of the property(ies), and determine how the property(ies) will be redeveloped and/or marketed for redevelopment. Considering these issues early on can make a big difference in successfully meeting your community's revitalization goals.



The former Odd Fellows Club and adjoining scrap yard in Crab Orchard, Kentucky, population 842, has been turned into a community park and marketplace for the farmer's market.

Why is redevelopment of brownfield properties important?

Brownfield properties are often abandoned, with owners no longer maintaining the property or paying taxes. Abandoned properties can quickly become eyesores and may attract vandalism and illegal dumping, which degrade the environment, depress our communities and potentially put our health at risk. Productively reusing such properties can reduce urban sprawl, increase the tax base, clean up the environment, encourage urban revitalization and create jobs for the community and surrounding area. Redeveloping these properties links economic vitality with environmental health.

What would be the advantage of having a revitalization plan for contaminated properties in my community?

Establishing a community-led revitalization plan aids in removing environmental hazards from communities, eliminates the need to develop pristine open space and farmland, reduces infrastructure costs, revitalizes communities by creating jobs and returns property to productive use and local tax rolls. An additional advantage of a community-based approach is that community members have a direct role in determining how their impacted properties can be cleaned up and redeveloped to best facilitate the community's future development plans.

Activities and Tools

Do you have contaminated properties or properties that are perceived to be contaminated in your community that you would like to do something about? Making a commitment to address these properties is the first step in successful redevelopment. The next steps depend on your community's plans or desires for future development in the municipality. Some questions one should consider are:

- Does your community want to clean up these properties and 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 for municipal uses, open-space purposes, economic development or for affordable housing?
- Has your community been approached by potential buyers, lenders or developers who have been subsequently "turned off" because the property is contaminated or perceived as contaminated?
- Does your community have (or want to develop) a comprehensive plan for revitalizing its abandoned or underutilized properties that are contaminated or perceived that way?

Forming a Property Revitalization Team

If the answer to any or all of the above questions is yes, your community may want to consider

forming a property revitalization team. Such a team is typically a mix of public and private parties from your community who have an interest in fostering a well-planned, successful cleanup and redevelopment. The team can be large or small or 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 revitalization vision. It can be made up of elected officials, planners, attorneys, environmental professionals, economic development officials, members of environmental and citizen interest groups and the like. 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 revitalization needs and desires. In addition to forming a team, it can be quite helpful to contact other local communities, private entities or professionals with previous experience addressing these properties. State and federal agencies have programs for assessment and cleanup of contaminated properties. They may have lists of local government and private contacts who are well-versed in the issues encountered at these properties and would be happy to share their knowledge. Contact information for your State's response program can be found in Appendix B of this document.

Revitalization Target Area - The first step in the process is to identify a property, properties or an area or zone that your community wants to target for redevelopment. You may want to compile an inventory of properties to help determine the size and scope of your redevelopment effort. By identifying these properties and prioritizing them in terms of redevelopment potential, you will be able to better utilize your resources.

Informational sources for property identification include:

- State-maintained brownfield, Superfund and waste management lists.
- Contact your State brownfield program for guidance.
- Tax records – Check local tax records for properties that are tax delinquent. If the operation is defunct and it was industrial in nature, it may potentially be a brownfield.
- Networking – Contact neighborhood associations, business groups, development organizations and citizens to help identify problem properties in your area.



Community Collaboration

When undertaking property revitalization in a community, especially in communities where there may be sensitive populations, project leaders should actively seek to engage the impacted population in the efforts to redevelop properties. Holding public meetings or visioning sessions with the impacted communities can:

- Help you identify potential properties for redevelopment.
- Address health and safety concerns
- Identify the community needs in order to thrive – jobs, healthcare, food access, etc.

After a project starts, you should keep the citizens involved in the redevelopment process by providing information about the progress of projects being undertaken. Outreach should be audience-specific and be available to all citizens in an area. For instance, if there is a large Spanish-speaking population, information should be available in both English and Spanish. Outreach tools can include:

- Websites
- Social media – Twitter, Facebook, Instagram, etc.
- Community meetings
- Television, newspaper and radio ads or spots
- Postcards and email blasts through distribution lists
- Public service announcements
- Outreach at community events and through organizations serving an area

- Windshield Survey – Sometimes hopping in a car and driving around in a target area is the best way to identify candidate properties. This can be done by members of the revitalization team or by trained volunteers.

Determining the Intended Use for the Property

The intended use of a property plays an important role in the revitalization process. If contamination is identified, the nature and extent of the contamination will have to be assessed. How that contamination is cleaned up, however, may be affected by the property's intended future use. For example, if the redevelopment plan calls for the construction of a light industrial facility, it may be appropriate to apply industrial investigation and cleanup standards that are less stringent than those that would be applicable to a property that is to be redeveloped for residential use. Therefore, it is important to consider potential redevelopment plans at the outset of any project.



Citizens take part in a visioning session held by the city and facilitated by the State brownfield redevelopment program. Participants were asked to identify what they would like to see in their reimagined neighborhood.

If the intended use is not known at the beginning of the project, the community representatives or property revitalization team should make every attempt to identify the general type of desired development, whether industrial, commercial, residential, recreational, [community gardens](#) or mixed-use. In the absence of that 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.

Financial Assistance for Community-Led Inventory and Planning Activities

The U.S. Environmental Protection Agency (EPA) makes grants available for the assessment and cleanup of brownfield properties each year. The proposal period usually opens in the fall. The EPA Area-Wide Planning Grant is a good resource for communities wishing to develop a redevelopment plan for a specific area. This grant is made available on at least an every-other-year basis. The Area Wide Planning Grant helps fund research, technical assistance and training that will result in an area-wide plan and implementation strategy for key brownfield properties. This grant is geared for neighborhoods, downtown districts, commercial corridors, etc., that are impacted by a single large or multiple brownfield properties. Brownfield Assessment Grants can also help fund some of the inventory, planning and community outreach activities performed during the planning phase. Those grants will also take you into the next phase, assessment of properties.

Additional financial resources, including grants from the U.S. Department of Housing and Urban Development (HUD) and other federal agencies, are listed in Appendix A of this document. Appendix A also includes brief descriptions of Tax-Increment Financing and other resources.

Communities have access to contractors through the Technical Assistance to Brownfields Communities (TAB) Grant Program. These TAB grantees can provide technical assistance to

communities and other stakeholders. They can help with community involvement activities, understanding brownfield concepts and technologies, complying with State and federal cleanup requirements and identifying funding. The services can be tailored to the community's need. Contact your State brownfield program to receive help in accessing the TAB program.

Your State program will be invaluable through every step of the redevelopment process. It is recommended that one contact them when thinking about undertaking brownfield projects. They can help you navigate liability issues, identify funding, assess properties, determine cleanup avenues and serve as a general technical resource. State contacts can be found via the EPA's website at <http://www2.epa.gov/brownfields/brownfields-state-local-tribal-information> or in the latest [State Brownfields and Voluntary Response Programs Guide](#).

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 or area where redevelopment is complicated by real or perceived 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 or area where contamination exists and the nature and extent of that contamination has been documented? *Go to Step 3 "Cleaning Up Your Property."*
- Has your community identified a property or area where contamination exists, documented the nature and extent of contamination, and analyzed the risks posed by that contamination? *Go to Step 4 "How Your State's Program Can Help When a Property Is Contaminated."*
- Has your community evaluated cleanup options for a contaminated property and selected a remedial action? *Go to Step 5 "Property Redevelopment."*

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

Once you have identified a potentially contaminated property that your community would like to redevelop, the next step is to determine whether there actually are any environmental conditions present that may affect future use and redevelopment. This will assist you in determining what liability the community may have and possibly the cost it might bear if it chooses to take ownership and begin a cleanup. Making a determination of whether a property is contaminated or not is accomplished by conducting an environmental property assessment, which includes a review of historical records, an inspection of the property and, quite often, collecting and analyzing soil and groundwater samples.

What is an environmental site assessment?

Environmental site assessments are typically conducted in phases, and are used to determine whether a property is contaminated or not. A Phase I environmental assessment is a review of all the records and knowledge associated with the property's historical record to see if there is the potential for the presence of contamination. If the Phase I indicates there is a potential for contamination, which is called a recognized environmental condition (REC), then the assessment of the property proceeds to the next phase. Some Phase I's may check for the presence of lead and asbestos. A Phase II involves sampling of the property and will help determine: the extent of contamination, the types and probable sources of contamination, the level of risk to humans and the environment associated with the contamination and whether the contamination needs to be cleaned up.



A Phase I environmental site assessment, which should be conducted prior to the purchase of a property, includes site research, such as deed searches, review of Sanborn Fire Insurance Maps and citizen interviews. In simplest terms, it's a book report about a property. It is an important first step in eligibility for brownfield cleanup grants and for liability defense.

Why should I conduct an environmental site assessment?

As with any large investment, you want to know what kind of additional costs you will incur before you finalize the purchase. In the case of a property with redevelopment potential, you want to find out if the property is contaminated and, if so, how much it is likely to cost to clean it up before you buy it. An environmental site assessment can accomplish that task and, if it meets the requirements of the All Appropriate Inquiry rules, limit your liability under the federal Superfund law. In addition, your State may also provide for a similar release of liability under State law.

What is meant by "All Appropriate Inquiry" (AAI)? All Appropriate Inquiry is basically a federal standard for due diligence. It is equivalent to the American Society for Testing and Materials (ASTM) standard E1527-13. Following the requirements of AAI in a pre-purchase environmental

site assessment is one of the conditions that gives [prospective purchaser liability protection](#) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA - a.k.a., Superfund) for those environmental issues that are identified by the AAI assessment.

Prospective property purchasers who were never involved in any practices that might have contaminated the property (a.k.a., innocent landowners) as well as owners of contiguous properties are eligible for protection from CERCLA, if AAI is conducted prior to purchasing a property. In addition, 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, access the EPA website at <http://www2.epa.gov/brownfields/brownfields-all-appropriate-inquiries>.

Who performs the environmental site assessment?

Environmental site assessments are typically conducted by environmental consultants trained and experienced in the areas of environmental investigation and clean up. Federal regulations require that AAI investigations be carried out by qualified environmental professionals who meet certain minimum requirements. Your State may have suggestions regarding when or if it is necessary to hire an environmental consultant. For more information on hiring an environmental consultant, access the EPA website at http://www2.epa.gov/sites/production/files/2015-09/documents/hiringep_addendum_factsheet.pdf.

Who pays for the assessment?

Assessment costs are typically paid for by the prospective purchaser, although under certain circumstances the EPA or State may be able to conduct these assessments at no cost to the municipality or nonprofit organization under their Targeted Brownfield Assessment program. For more information about this program, see Activities and Available Tools below.

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

Yes, if you have permission and access rights from the owner of the property. Municipalities and developers often include access rights and permission to conduct an environmental assessment as part of their pre-purchase agreement with a property owner. Furthermore, in order to benefit from liability protections, these assessments must be done prior to the purchase of the property.

Does my State require cleanup of this property?

Assessment and cleanup of properties must be conducted in conformance with the requirements of both the EPA and those of your own State. Please see Section 4 of this toolbox, and check with your State program. There are many situations in which no cleanup is needed or necessary.

Does a Phase I include lead and asbestos?

Although lead-based paint and asbestos are not part of the federal due diligence process, lead-based paint and asbestos issues can significantly impact property redevelopment and should be



Always do a Phase I environmental assessment of a commercial property prior to purchase in order to be eligible for federal and State liability protections and grant funding.

Also, remember that the lowest cost is not necessarily the best. This is a document you will base your liability upon, so make sure it is performed to the AAI standard by a qualified environmental professional.

considered as a part of any environmental evaluation. The EPA website has information on lead at www2.epa.gov/lead and asbestos at www2.epa.gov/asbestos. These pages can help you determine potential sources for both, and if you should be concerned.

Will a Phase I 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 Brownfields Act requires that a Phase I assessment used to meet the requirements of AAI must be completed 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, records search, interviews and search for environmental cleanup liens). This protects the buyer from inadvertently accepting liability for contamination that may have occurred between the time the initial assessment was conducted and when the property actually transfers. After 180 days, a Phase I must be updated.

Should I be concerned about vapor intrusion?

Vapor intrusion occurs when vapors and gases from contaminated soils and groundwater seep into indoor air. This poses a human health risk. If there is a history of dry cleaning solvent, gasoline or diesel fuel or industrial degreaser use, there may be potential for vapor intrusion. A Phase I can help identify former uses of a property that could point to the presence of those contaminants. Phase II sampling can help determine if they are present and if vapor intrusion may be an issue. Your State program can help provide guidance on screening and remediation for vapor intrusion.

Activities and Available Tools

Phase I Environmental Assessments

A Phase I environmental assessment requires that an appropriately qualified environmental professional review existing records concerning the property, research the operational history of the property, and conduct a site visit and interviews to determine if the potential exists for contamination at the property.

Phase I assessments are used to identify existing or past uses of property and evaluate the potential presence of environmental contamination. Contamination can consist of hazardous substances and petroleum products, as well as asbestos, lead-based paints, mold and radon.

If the Phase I assessment does not indicate a significant potential for environmental risk due to contamination at the property, then further investigation or cleanup may not be needed. You should consult your State program for verification.

If the assessment is inconclusive or identifies potential contamination that poses environmental risk, further environmental assessment 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. Sampling for contamination and determining the need for cleanup at the property is conducted under the Phase II assessment.

Phase II Assessments: Sampling and Risk Evaluation

A Phase II environmental assessment is a 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 environmental contamination at the property. Sampling to confirm the presence of lead-based paint and asbestos-containing materials is also recommended for older buildings or structures. Before and after conducting the sampling activity, it may be appropriate to involve your State program to comment on the relevance and adequacy of the effort.

If contamination is confirmed and the levels of contaminants are known, an assessment of risks to human health and the environment may be conducted to determine how people and/or the environment could be affected. Once a risk evaluation has been conducted or a comparison is made to State or federal cleanup standards, a decision can be made as to whether or not the condition poses an unacceptable environmental or health risk. If unacceptable risk is determined to exist at the property, a plan can be developed to cleanup the property and reduce risks to humans and the environment.



A geoprobe is used to collect a soil sample at an old hospital property. Phase II sampling can determine whether a release has occurred, delineate the extent of the contamination, develop a cleanup cost estimate and determine a baseline environmental condition for liability purposes.

The Phase II site assessment is designed to evaluate the degree of contamination and health or environmental risk posed by exposure to such contamination. It may not provide sufficient information to estimate the exact quantity of contamination to be addressed or the costs of cleanup. Additional work may be needed, which is discussed in Step 3 of this document, “Cleaning Up Your Property.”

EPA Assessment Grants

Grants of up to \$200,000 are available to municipalities and quasi-governmental entities that bear no responsibility for causing the contamination at a property. These competitive grants are available on an annual basis for planning and assessment of properties contaminated with petroleum or hazardous substances. See <http://www2.epa.gov/brownfields/types-brownfields-grant-funding#tab-1> for more information.

Targeted Brownfields Assessments

The EPA regional offices or your State program may be able to assess properties by performing a Targeted Brownfields Assessment. At the request of a municipality or nonprofit, the EPA, or possibly your State, can perform an assessment and assist in the planning process for redevelopment of qualifying properties. These assessments are conducted at no cost to the requesting community or nonprofit organization at properties where there is a clear public benefit and the community did not cause the contamination. See <http://www2.epa.gov/brownfields/targeted-brownfields-assessments-tba> for more information or check with your State program. For more information on tools and financial resources to assist you with project planning and property assessment, refer to Appendix A of this document.

Determining Your Next Step

The following questions will help you determine your next step in the contaminated property redevelopment process:

- Did my environmental site assessment reveal any potential contamination or other recognized environmental conditions on this property?
 - If no, go to Step 5, “Property Redevelopment.”
 - 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 prior to marketing it for redevelopment, go to Step 5, “Property Redevelopment.”
- Does the contamination pose a risk to human health or the environment?
 - If yes, then cleanup will likely be necessary, so proceed to Step 3 “Cleaning Up Your Property.”
 - If no, and it does not affect the future use of the property, then proceed to Step 5, “Property Redevelopment”
- Does the contamination require cleanup or other corrective measures in order to protect human health or the environment or can the contamination be addressed through a deed notice or other similar mechanism?
Go to Step 3, “Cleaning Up Your Property.”
- What financial or human resources are available to address this project?
Go to Step 4, “How Your State’s Program Can Help When a Property Is Contaminated.”

Step 3: Cleaning Up Your Property

Step 3 is a pivotal point in the process of bringing brownfield properties to redevelopment. Cleanup of environmental contamination, also referred to as remediation, mitigation or a removal action, is likely to be the most expensive and complex step in the process to readying the property for redevelopment. It is dependent on a number of factors and will require the knowledge and experience of qualified professionals in the field of environmental remediation. State program staff will be invaluable to you as you proceed through the cleanup process, so involve them throughout.

The degree of cleanup performed on the property and the methods used should be determined by the nature and extent of the contamination identified, media affected or potentially affected, regulatory requirements that apply and its planned end use. While we have divided the toolbox into five separate steps, when Step 3 is reached it is almost always the fastest, most efficient and comprehensive path to property redevelopment if the final two steps are addressed concurrently.

Very seldom is it economically or even technically possible to remove all contamination from a property. For this reason, federal, State and municipal environmental regulations are written to consider a risk-based cleanup standard. The standards are set to identify a concentration or presence of a specific contaminant that will present a minimum risk to human and ecological health. This level of risk-acceptable contamination depends on the media that are contaminated, the likely pathways of exposure to the contamination and the likely duration of an individual's or organism's exposure. How the model used to determine these acceptable levels of contamination was designed and the assumptions made as to what is an acceptable level of risk are necessary to determine to what extent of cleanup is required on the property. As some of this information may be determined by the planned end use of a property, this knowledge is also valuable as one enters Step 3. It should be clear then that Step 4, the involvement of the regulatory agency that oversees the property's cleanup and that will determine if it is cleaned up satisfactorily, and Step 5, the intended redevelopment goal for the property, are very significant as one enters Step 3.

Activities and Available Tools

Types of Cleanups for Contaminated Properties

The type of cleanup required at a property depends on a number of factors, and it requires the knowledge of a trained and experienced professional to consider the property-specific factors and formulate the most effective method of cleanup. The factors that need to be considered include location, type and amount of contaminant(s) present, how widespread and deep the contamination is and the intended future use of the property.



Many contaminated properties require soil treatment or removal. However, some properties like the Columbia Theater in Paducah, Kentucky require asbestos and lead removals in order for reuse to occur.



Remediation technologies can often be integrated with redevelopment features, so start discussions with your cleanup consultant and planners or developers early in the process.

The most common types of cleanups include removal or treatment of contaminated soil, capping and/or covering the contaminated area and cleaning up groundwater. Often at brownfield properties, there are also standing structures that need to be investigated for the presence of potentially hazardous building materials or PCB-containing transformers. The technologies available to address these issues and the methods in which these technologies can be applied are numerous. More often than not, cleanup of a property incorporates more than one technology and method to achieve the desired endpoint.

Treatment methods of both soil and groundwater include mechanical or physical, chemical and biological means. One example of physical remediation methods is the straight-forward excavation and removal of contaminated soil from the property. An example of chemical treatment, known as a permeable reactive barrier, is used frequently for hexavalent chromium contamination in groundwater. The barrier introduces a reducing metal ion, like free iron, which will react with hexavalent chromium by reducing it to the far less toxic and less soluble trivalent chromium ion, thereby removing the hexavalent chromium

contamination from the groundwater. An example of biological treatment of petroleum-contaminated soil is a technique known as land farming. In land farming, soil contaminated by petroleum products is excavated from the subsurface and spread in a relatively thin layer (1–2 feet thick) in a lined cell. Nutrients and water, if necessary, are added to the contaminated soil to encourage the growth of naturally occurring microbes that use the long-chain hydrocarbon molecules as an energy source by breaking them down into more innocuous hydrocarbon molecules. The soil in the cells is typically tilled occasionally to assure sufficient oxygen is available to encourage the microbial growth.

[Appendix A](#) lists several web-based resources that can be helpful in learning about and understanding these cleanup strategies. Perhaps of greatest use to anyone is the [Brownfields and Land Revitalization Technology Support Center](#) (BTSC).

The BTSC was created by the EPA in 1998, to help decision makers evaluate strategies for property investigation and cleanup process, select the best remediation contractor, understand complex contamination and cleanup issues and provide technical assistance to decision makers and communities. Also found in [Appendix A](#) are the [Hazardous Waste Clean-Up Information](#) (CLU-IN) and [Interstate Technology Regulatory Council](#) (ITRC) websites. While these websites are generally geared more toward environmental regulators and private sector professionals, they can be of great use in identifying the latest remediation technologies and strategies and provide detailed information on how a remedial technology works and why one may work better in a particular situation than another.



In-place treatment methods, such as soil solidification, may be effective for both contaminant immobilization and soil stabilization.

Loans and Grants Available for Funding Cleanup

One of the biggest barriers to the cleanup of contaminated properties is financial resources. The EPA brownfield cleanup grants are an excellent source of funding for the cleanup of qualifying properties (see Step 1,

“Property Identification and Project Planning”). But these grants are highly competitive, and applications are only accepted once a year, making this option impractical for many redevelopment projects. Information about the Brownfield Cleanup Grant can be found on the EPA’s brownfield web page at <http://www2.epa.gov/brownfields/types-brownfields-grant-funding#tab-3>.



Heifer International Headquarters in Little Rock, Arkansas, is built on a property that was once home to a railroad switchyard and other industrial use properties.

Another potential source of cleanup funding may be grants or loans from your State environmental or economic development agencies. Many States have brownfield revolving loan funds. These revolving loan funds generally allow parties to borrow money to fund assessment and cleanup of qualifying properties at low interest rates. You should contact your State agency to see if such funding is available.

Appendix A provides links to a number of other potential grant and resource programs available through other federal agencies, such as Housing and Urban Development (HUD), U.S. Department of Agriculture (USDA), U.S. Department of Commerce and other federal and non-federal agencies. Appendix A also identifies a number of municipal bond and tax mechanisms that can potentially be implemented to create a revenue source to clean up properties for redevelopment.

Planning Your Next Steps

As stated in the introduction to this section and emphasized throughout the toolbox, while the redevelopment process tends to occur in a sequenced series, it is generally most successful if a well-defined goal is identified at the start. This becomes quite significant once it is determined that some cleanup of the property will be necessary. As was illustrated in this section, the cleanup strategy selected for the property is best accomplished with input and consultation from the regulatory agency with the authority to accept the level of cleanup once complete, and this will likely be linked to some extent to the final end use of the property.

If it is determined that the property you have selected will require some cleanup prior to its reuse, there should be a consensus among the community and decision makers as to what the ultimate goal of the cleanup will be as this will likely be the most expensive step in the redevelopment process. This toolbox also provides a number of resources that can help you learn about and understand the various technologies and methods available to achieve the cleanup goals you set for your property. It is very important to remember that the decision and strategy on what technologies to use and how they are applied necessitates a qualified professional in environmental remediation who establishes a clear line of communication with the regulatory officials involved.

FAQs

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

If, after conducting an environmental assessment as described in Step 2, your sampling results exceed your State’s cleanup levels or the risk assessment indicates that a potential risk to human health or the environment exists, it is likely that some form of cleanup is necessary.

Who do I need to consult to get help with cleaning up the property?

If you haven't done so already, you should hire an environmental consultant to work with you to develop and implement a plan to address the contamination at your property. Additionally, it may be necessary to hire an environmental attorney who is familiar with State and federal laws to assist you in dealing with the legal issues relative to the cleanup process. Finally, you should also contact your State environmental agency and ensure that any cleanup work you are planning to conduct will fulfill State requirements. See Step 4 for more information regarding your State's cleanup requirements.

How much will the cleanup cost?

The more information you have about the types and amount of contamination on your property, the easier it will be to estimate the cost to clean it up. In addition, determining future intended use for the property may allow you to tailor the cleanup and reduce the costs.

Incorporating cleanup activities into the general construction process or using innovative architectural designs can help reduce costs. For example, it may be possible to reduce the amount of contaminated soil that need 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. You may want to contact your State's environmental agency for websites and contacts that can provide you with more information about these remediation techniques.

What types of cleanup might be necessary at contaminated properties?

Soil, sediment, groundwater and indoor air may need to be cleaned up at a 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 cleanup might be necessary during the demolition phase to address issues, such as asbestos or lead-based paint.



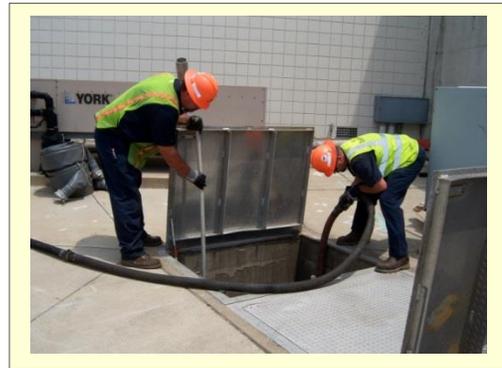
Early integration of remediation and redevelopment planning pays off. Structural support for contaminated soil excavation will become underground parking at a busy

What are engineering controls?

Engineering controls (ECs) are structures, facilities, devices, etc., that are used on a property to continue to control or manage contamination left in place following the primary effort of the cleanup. An EC can be temporary or permanent. An example of a temporary EC is a pump-and-treatment system designed to clean up the

contaminated groundwater. Because such cleanup efforts can take years, property development may continue with the pump-and-treatment system left in place and the new development continuing on by building around the water treatment system. When the groundwater contamination is removed to some acceptable end point, the wells associated with the system can be properly abandoned and the treatment system removed.

A permanent EC could be a soil cap. A clean soil cap of certain thickness may be placed on the property to prevent contact with remnant contamination below. In this case, because the contamination was left behind at some concentration that may potentially affect health or the environment, the cap is constructed with the intent that it never be disturbed. If it becomes necessary to breach or disrupt the soil cap, it is important for the effectiveness of the remedy that it be repaired and returned to its original design specifications as soon as possible.



What are Institutional Controls?

In cases where the cleanup does not remove or address all of the contamination at the property to the most stringent of standards (e.g. for residential or unrestricted use) ECs and/or limitations on future land use may be required as part of the cleanup. These land use restrictions, commonly referred to Institutional Controls (ICs), can include administrative and legal instruments that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy.

ICs are intended to reside in the property chain of title records and should be outlined in the Phase I, so future owners must adhere to these limitations. By making future owners and others aware of the location of contamination, a less stringent cleanup option may be implemented that is just as protective of humans and the environment as a more complete cleanup. Some examples of ICs include easements, activity and use limitations, restrictive covenants, well drilling prohibitions, deed restrictions, zoning restrictions and special building permit requirements.

Each State's real estate laws vary. In some States, the owner is the only person who can place such instruments in the chain of title. Check your State's laws for specifics for your situation.

Determining Your Next Steps:

- Have you completed cleanup prior to redevelopment?
 - Go to Step 5, "Property Redevelopment."
- Have you identified but not addressed all environmental concerns at the property, and do not intend to clean up the property prior to selling it?
 - Go to Step 5, "Property Redevelopment."
- Do your cleanup activities require institutional controls and have they been appropriately filed and recorded according to applicable statute and regulation?
 - Go to Step 4, "How Your State's Program Can Help When a Property Is Contaminated" and refer to Appendix A which provides a link to contacts for each State.
- If you know who the purchaser of the property will be, have you conveyed the content and responsibilities of the institutional controls to them?
 - Go to Step 5, "Property Redevelopment."
- 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?

- Go to Step 4, “How Your State’s Program Can Help When a Property Is Contaminated” and refer to Appendix A which provides a link for each State.

Step 4: How Your State’s Program Can Help When a Property Is Contaminated

Cleanup of a contaminated property can be expensive and time-consuming. As a result, many developers are recognizing that State brownfield programs can provide a variety of benefits to help facilitate property transactions and assist with cleanup that is necessary to allow properties to be redeveloped or otherwise reused. From technical advice and cleanup guidance to resource identification, involving your State program from start to finish will ensure that your cleanup progresses smoothly.

Contaminated properties that fall under the jurisdiction of regulatory programs, such as the Resource Conservation and Recovery Act (hazardous waste laws) or Underground Storage Tank (UST) statutes are required to conduct a cleanup according to the requirements of those regulations. However, contaminated properties that do not fall under the purview of regulatory programs are usually referred to as brownfield properties. Both State and EPA brownfield programs are designed to encourage property owners to conduct cleanups on their properties that might not otherwise take place.

States maintain a variety of programs to facilitate cleanup and redevelopment of brownfield properties. These programs complement federal programs, often the cleanup and redevelopment is handled on the State and local level, which eliminates the need to involve the EPA. The advantages of cleaning up a property under a State program can include financial assistance for the cleanup and also liability relief for all parties involved in a property transaction. Additionally, State program staff work and live in the same communities where cleanup is needed and share a common vision of a clean environment and productive reuse of properties.

Although some States may require property owners to conduct a cleanup of contaminated properties, many States have programs that allow property owners to voluntarily conduct cleanup under a non-regulatory framework (or under a framework that provides regulatory flexibility) to meet real estate development goals and minimize environmental-related costs. Some States use intermediaries, such as nonprofits, to provide technical assistance and facilitate communication where a property owner might be uncomfortable speaking directly to perceived regulators – a friendly carrot rather than a regulatory stick.



Consider developing a brownfield assistance team consisting of various local and State partners that can sit down with potential redevelopers and serve as a one-stop shop for a project. This saves time and money and shows a willingness to work proactively with redevelopers.



State programs can assist those who want to redevelop contaminated properties by helping address liability issues and concerns. They can also help identify resources for redevelopment.

Cleanup requirements for contaminated properties can vary slightly from State to State. Most States use a risk base process where cleanup requirements are determined by the intended future use of the property. Cleanup requirements can be either more or less stringent, depending on the planned future use of the property. For properties where cleanup

efforts include on-site containment of waste materials, States can usually offer tools, such as ICs or environmental covenants, to help manage long-term risks and ensure cleanup activities are protective for future property users.

Many States offer technical and financial assistance for environmental assessments to resolve unknown conditions, often a deterrent in attracting development. Because the cost of environmental cleanup is often the biggest impediment to redevelopment of contaminated properties, many States offer a variety of financial incentives to improve the viability of brownfields redevelopment projects. Although some of the assistance offered by States is only available to local governments and nonprofits, many incentives are also available for private entities.



Remember to follow the recorded engineering and institutional controls for your property when you are doing redevelopment planning. They are permanently linked with the deed.

Most States operate Brownfield State Response Programs and use these programs to provide education, technical assistance, environmental assessments and, in some instances, funding for cleanup. Usually, these types of assistance are only available to public entities, redevelopment agencies and nonprofits. In addition to brownfields services for local governments and nonprofits, most States also offer a variety of incentives that are available to both public and private entities. Many States and some local economic development agencies operate brownfields revolving loan funds that can provide financing with flexible terms and low interest rates. Tax credits and incentives are also available in many States

to facilitate brownfields cleanup and redevelopment. States also offer other tax incentives that may not be specifically targeted to brownfields properties, but serve as another tool to help offset the increased transaction or development costs attributed to environmental cleanup. Different States have utilized a wide variety of these incentives to assist with brownfields redevelopment. Tax increment financing, enterprise zone tax credits, economic development credits, job creation tax credits and historic preservation credits are all examples of tax incentives that can facilitate brownfields redevelopment.

The cost of environmental cleanup is not the only issue that impedes redevelopment of brownfield properties. Liability concerns are another factor that can prevent not only property redevelopment, but also hinder property transactions. Fortunately, many State cleanup programs are designed to address liability concerns. Most State programs issue some form of completion or close-out letter for properties that have completed cleanup. These letters serve a variety of purposes. The letters can be used to facilitate property transactions by informing prospective purchasers and financial institutions that property contamination issues have been resolved and that future users will not be held liable for past contamination. Another advantage of performing cleanup under a State

program is that many States enter into a Memorandum of Understanding or similar agreement with the EPA that stipulates the EPA will not pursue further response actions at a property that has been successfully cleaned up under a State program. The liability relief afforded by State programs may also allow projects to attract financing for both environmental cleanup and vertical development.

As brownfields programs have matured over the last decade, States have become more adept at working with property owners to develop solutions for the cleanup and redevelopment of contaminated properties. As a result, State brownfields programs are often designed to be more streamlined and with less regulatory control than other environmental cleanup programs. Basic information about each State's cleanup program can be found in [Cleaning Up Brownfields under State Response Programs- Getting to 'No Further Action'](#) or at the EPA's interactive property available at <http://www2.epa.gov/brownfields/brownfields-state-local-tribal-information>.

Step 5: Property Redevelopment

The challenges associated with redeveloping a contaminated property may seem overwhelming at first, but these issues do not need to be a deal killer. Understanding the challenges associated with your property and how those relate to the proposed development is a crucial component of getting your brownfield property redeveloped.

You have reached the sweet spot and it is time to redevelop your property. You have likely gotten here in one of three ways:

1. You have done the planning, investigation, and cleanup of your property to make your property redevelopment-ready, or
2. You have identified that the property has contamination associated with it and have decided to market the property for simultaneous, cleanup and redevelopment, or
3. A developer showed interest in your property and you learned of the brownfield condition at that time. In this case, you will need to determine the property conditions and cleanup actions needed before you can proceed with simultaneous cleanup and redevelopment.



Regardless of how you get there, when you are ready to begin marketing and/or redeveloping a brownfield property, there are a number of unique challenges you may encounter. Knowing how to negotiate these challenges is crucial to your project's success. First and foremost, you need to have a basic understanding of the following:

What Is the Proposed Reuse of the Property?

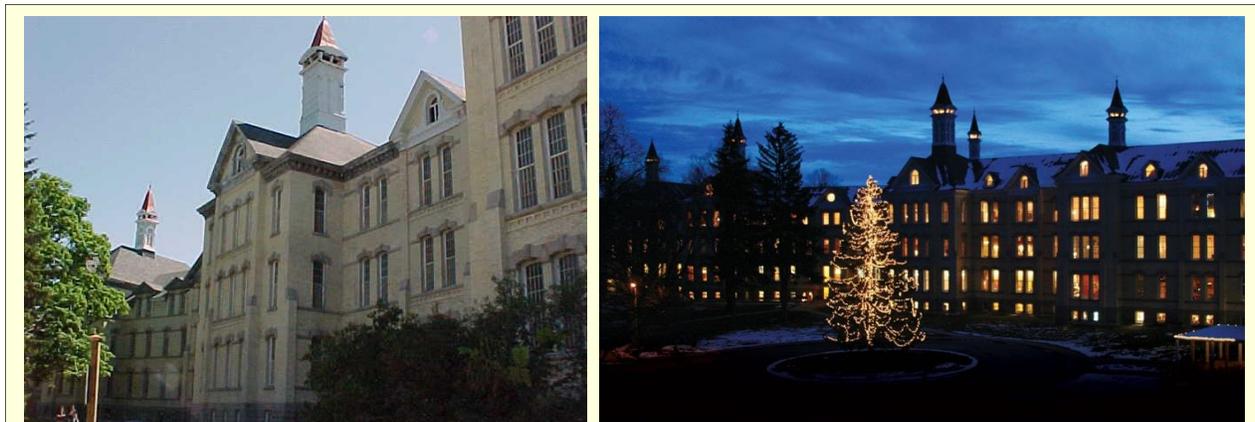
It is often tempting to take the first offer that comes your way, in an effort to just get that troublesome brownfield property redeveloped and back on the tax roll. It is important to make sure that the proposed use fits into your plan and vision for the property and the surrounding area that was established in Step 1.

What Are the Environmental Property Conditions?

In Step 2, you determined the contaminants that were present and where they were located. This information is crucial in helping you to determine not only the type of development that is appropriate for your property, but could also specifically influence the location of the buildings, parking areas, etc., as the development plans proceed. Be aware that this information is crucial to successful redevelopment of a brownfield property. As previously discussed, there are a variety of funding sources available to help you gather this information.

Does the Property Need to Be Cleaned Up?

Requirements for cleanup can vary by State and local jurisdiction, but often a full-scale cleanup is not needed to redevelop a contaminated property. Instead, it is more common that some contamination may remain on the property and appropriate care activities are undertaken to make the property safe for redevelopment. You determined in Step 3 what cleanup or appropriate care actions would be required to make the property safe for redevelopment.



By their very nature, contaminated properties have their share of barriers to redevelopment. Some of these barriers are real, and some are merely perceived. *Grand Traverse Commons, Traverse City, Michigan.*

If the cleanup/appropriate care activities have already been performed, the property should be ready for redevelopment. If not, the activities may be performed in conjunction with the redevelopment of the property. As previously discussed, there are a variety of funding sources available to help you with the costs associated with cleanup and appropriate care activities. The key to redeveloping these properties is to understand what the real barriers are and know that they can almost always be overcome. Examples of a few of the common barriers associated with brownfield redevelopment are as follows:

Institutional Controls

IC's and EC's are all tools that are used to manage risk and ensure the safe reuse of a contaminated property. Regardless of the tool used, it is important to understand the restrictions and requirements for your property and what they mean for potential reuse of your property. These

tools are used to limit such things as the type of development, excavation of soils, groundwater use or to assure that a remediation system continues to operate.

Developers, potential owners and/or occupants will all need this information to formulate the best plan for safe reuse of the property and to assure that any ongoing obligations associated with the property are fulfilled. These obligations are property and State-specific and may include periodic review and reporting of property conditions, operation of a remediation system or payment of an annual fee. You should check with your State cleanup program to determine whether any such ongoing obligations apply to your property. A failure to follow these future use restrictions or limitations may result in environmental liability to future property owners.

Project Financing

If a developer is seeking funding for a fabulous new development on a clean, vacant field, this is easy to sell to a lender. However, move that same development to a property that is known to be contaminated and lenders can become a little anxious. Neither lenders nor developers want to end up in a situation where they get stuck cleaning up contamination that someone else caused.

As a result, lenders typically look for documentation of property conditions in the form of Phase I and Phase II assessment reports, All Appropriate Inquiry reports or something similar. If the property has already been cleaned up, they may be interested in reviewing the closeout report and having a copy of the closure letter received from the State or its designees. Most State environmental agencies retain copies of these documents in their files for the public to review. You may also want to set up an information repository in a local library to facilitate review.

Time and Money

Addressing the environmental condition of a contaminated property can add both time and cost to a project. Despite this fact, many impacted properties are often in key locations, already have infrastructure in place and have enough other benefits to keep the hesitant developer at the table. With proper planning to account for the environmental work required for redevelopment and the



Some lenders and grantors may not fully understand the restrictive covenants or easements used to manage residual contamination at brownfield properties. Be sure to ask early on if these institutional controls will be an impediment to financing.



Before and After: Creative Arts Center, Detroit, Michigan.

use of State and federal funding that is available to assist with this work, this barrier can be overcome.

Keys to Success

Although every brownfield project is unique, there are common elements that are typically found in the successful redevelopment and/or marketing of contaminated properties. These key project elements are listed below.

- **Be Proactive**

Identifying redevelopment priorities and evaluating potential environmental concerns is an excellent way to be informed and ready when a prospective development offer comes your way. Completing a Phase I Assessment allows informed decision making for redevelopment projects.

- **Be Even More Proactive – Make Property Shovel Ready**

Based on the redevelopment goals for the property and in partnership with the local and State environmental and economic development staff, identify and utilize the tools that will make your property 'shovel-ready' for development. A shovel-ready property is one where as many regulatory hoops 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 because you will clear regulatory hurdles for the purchasing developer.

- **Partnerships**

Figure out who needs to be at the table to help move your project forward and make sure they are a part of your project team. In addition to including the relevant local representatives, consideration should be given to involving federal and State environmental and economic development agencies. Early involvement of project partners can help expedite any needed approvals and identify possible funding sources.



Before and after: The Garage– Northville, Mich.

- **Know Your Tools and Resources**

There are a number of State and federal funding opportunities to address the brownfield conditions of a property. Use your redevelopment goals/plan to identify and utilize the appropriate tools throughout redevelopment.

Market Your Property:

Market your redevelopment project. Local and State economic development staff can be particularly well-versed in strategies and available avenues for marketing. Coordinating with these representatives will help ensure success. Some economic development agencies maintain list of properties for redevelopment.

Grant Funding Through EPA

As mentioned previously, the EPA has [several grant funding opportunities](#) for brownfield planning, assessment and cleanup. These are awarded through a competitive application process. In general, these funds are available to local governments, nonprofits and quasi-governmental agencies, although nonprofits are not eligible for assessment funding. Here is a brief rundown of the grants:

- [Area-Wide Planning](#)—These grants help fund research, technical assistance and training that will result in an area-wide plan and implementation strategy for key brownfield properties. This grant is geared for neighborhoods, downtown districts, commercial corridors, etc., that are impacted by a single large or multiple brownfield properties.
- [Assessment](#)—These grants assist recipients in efforts to inventory, characterize, assess and conduct planning and community outreach for brownfield properties. Applications are accepted for both hazardous waste and petroleum and can be community-wide or for a specific property. Three eligible entities can apply as a coalition for up to \$1 million. The EPA reserves the right to cap coalition grants at lower amounts depending on the funding available. No match is required for an assessment grant.



There's nothing like a big check. In order to be competitive in grant competitions, a strong end use and proof of a master plan are always important. Grant funders want a clear picture of what you intend to do with a property or area.

Communitywide	Site-Specific	Coalition
Up to \$200,000 for hazardous substances or petroleum	Up to \$200,000 for hazardous substances and/or petroleum (may request a waiver for up to \$350,000)	Up to \$600,000 per coalition (3 eligible entities) <small>**Coalition members may NOT apply for individual assessment funding.</small>
Maximum combined amount \$300,000 (example: \$200,000 hazardous and \$100,000 petroleum)	Maximum amount \$350,000	Maximum amount \$600,000 in hazardous and/or petroleum funding

- [Cleanup](#)— Cleanup funding can be used to carry out cleanup activities at a brownfield property. There are very specific eligibility criteria for cleanup grants, so potential applicants should pay attention to those requirements before submitting an application. Cleanup grants are awarded

in the amount of \$200,000. An entity can apply for one cleanup grant for up to three properties in a year for a total of \$600,000. The entity must also own the property at the time of application. A 20 percent statutory match is required.

- [Revolving Loan Funds](#)– Revolving Loan Funds (RLF) allow recipients to make sub-grants and loans for brownfield cleanups. Applicants can apply for up to a \$1 million to start their own fund. A 20 percent statutory match is required.

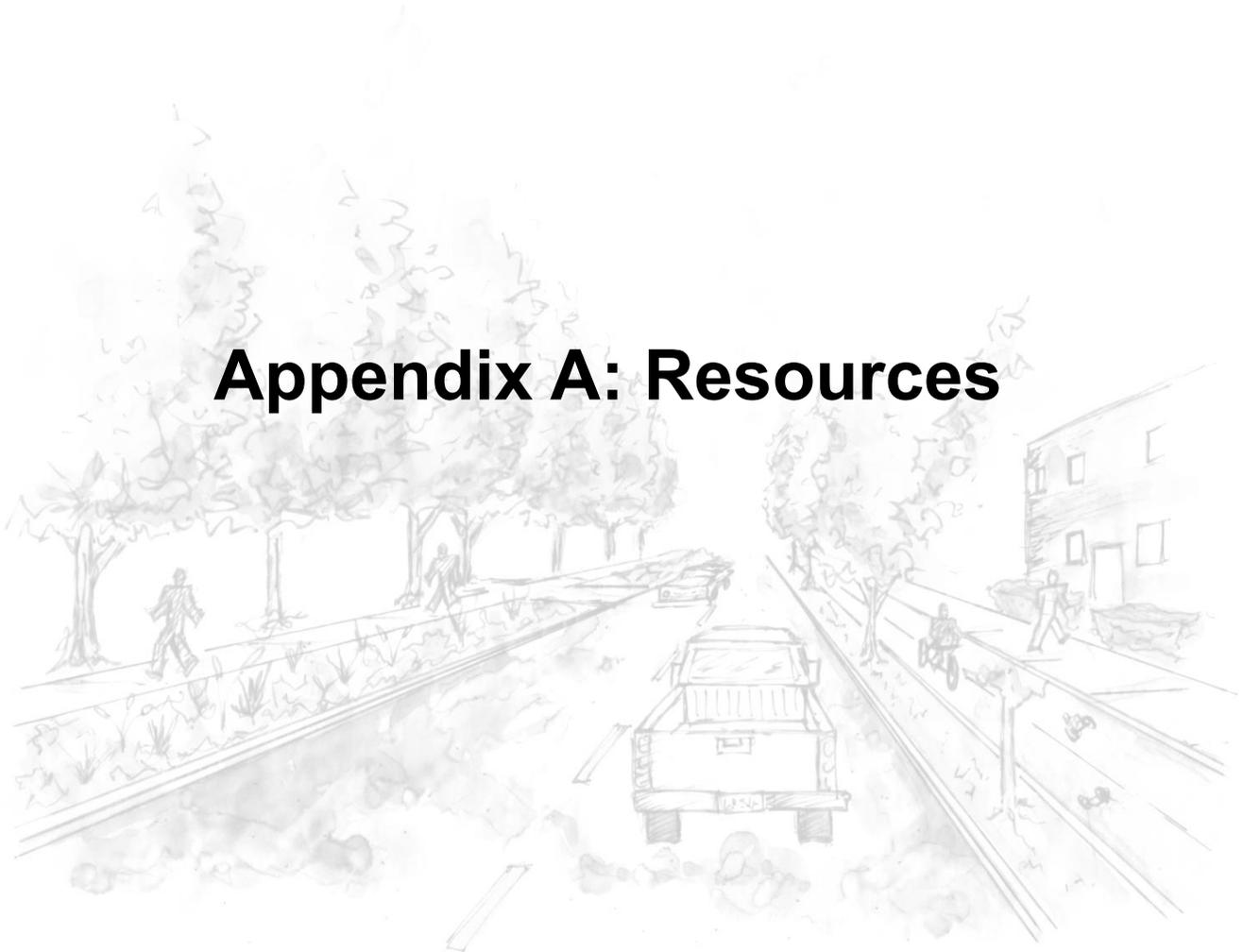
Grant Tips

You will find that there is no one magic source of funding for property redevelopment. While the EPA has grants for assessment and cleanup, they should not be considered the sole source of funding for a project. If an end user is not in line for a property, chances are you will be looking at piecing together a funding puzzle, which will likely involve grant funding. Here are some tips for communities and organizations looking for grant funding through the EPA and other funders.

- **Look for multiple streams of support.** A small grant here, a donation there can help you show support for your project and your ability to successfully [leverage resources](#). It also speaks to project's sustainability over time.
- **Establish a Grants.gov account.** Most federal grants, including brownfields, require that applications be submitted through the grants.gov website. Make sure you start an account well in advance of a grant deadline as the process takes a couple of weeks.
- **Be prepared.** Brownfield grants and other federal grants are a lot of work and you should be prepared to put in the effort required for a successful project. Read last year's guidance, review other applications, etc. to see what the requirements are and if you community is ready.
- **Find support and commitment from partner organizations.** Committed project partners can strengthen your project and your applications. Bland letters of general support in a grant application will not be impressive. However, specific time, monetary and labor commitments show that your project is important to more than just you.
- **Read the request for proposal (RFP) and follow the directions.** Many grants are unsuccessful because applicants were either ineligible or they didn't follow the RFP. You should thoroughly read and respond to all of the requirements outlined in the grant guidance. Your guidance will also tell you what are eligible and ineligible activities.
- **Review the Frequently Asked Questions.** Even if you think you do not have any questions, review the FAQs as they sometimes hold gems of information that can help you with your application.
- **Answer every question in the grant, even if it does not apply to you.** Those questions are there for a reason. Even if you have not had an adverse audit from the federal government you need to indicate that clearly. By not stating so, reviewers may think that you have had issues, plus you will lose points on your overall score. As a rule if a sentence in the guidance states, "explain", or "describe", etc. you should provide a response.
- **Follow the prescribed format of the grant.** Reviewers have to review multiple applications. You should make your document easy to read and it should be formatted and numbered to match the guidance. You should also stick to the prescribed page length as reviewers are not required to read pages that are over the page limit.
- **Your project should match the priorities of the funder.** Federal grant guidance often lines out what funding priorities are for the nation and region. Your grant will be stronger if you are addressing one of those needs. However, do not create a project that is out of your organizations purpose and goals just for funding. It may make carrying out the project difficult.

- **Your proposal should clearly identify and address a need.** This is the basis of your application and every section of the grant should speak to how your project will address that need.
- **Have another set of eyes review your documents.** Have someone not involved in your line of work review your document. If that person can understand it, so can the reviewer.
- **Your grant should be easy to read.** Your grant should not be overly complicated and should be free of jargon. Federal grants have a panel of reviewers, and panel members are not always from the sponsoring program, so jargon should be kept to a minimum.

Appendix A: Resources



Redevelopment Resources

Tips for Resource Identification

- One of your best resources is your [State brownfield redevelopment program](#). Program staff can help guide you through assessment, cleanup and resource identification for your project. If you are unsure of who to contact, the EPA maintains a page with State program contacts at <http://www2.epa.gov/brownfields/brownfields-state-local-tribal-information>.
- If your State is home to a particular problem or issue (abandoned coal mines, textile mills, sugar beet processing plants, etc.), there may be special funds and programs out there to assist you. Google searches can assist you in identifying if your State has special programs.
- Seek assistance from regional resource agencies. If you are a small entity or are new to redevelopment, many times regional resource agencies can provide information and resources that are specific to your area.

Federal Resources

The U.S. Government has numerous grant and assistance programs that can be accessed for brownfield redevelopment purposes. The EPA and its partners have compiled two comprehensive guides to federal resources that give overviews of each of the programs, how the services can be used and how to access the funding.

- [Brownfields Federal Program Guide](#)—This guide, updated in 2015, provides an entry to each federal agency. It includes its mission, its connection to brownfields and lists the programs that provide technical or financial assistance to projects.
- [Federal Resources for Sustainable Rural Communities](#)—This document, published by the USDA and its partners, outlines programs from the HUD, U.S. Dept. of Transportation (DOT), EPA and USDA that can be utilized by communities.
- Tax incentives for historic preservation or energy efficiency may be applicable to your project. Check out the [EPA's Guide to Federal Tax Incentives for Brownfields Redevelopment](#) to see what is applicable for your project.
- Below you will see a listing and brief descriptions of some of the programs offered by the federal government. For more detailed descriptions and links, see the guides referenced above.

Appalachian Regional Commission

Appalachian Regional Commission (ARC)

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

ARC provides grants for roads and highways (targeted to State and local governments in the 13 Appalachian States) and offers planning and technical assistance to attract private investment to distressed areas to support new uses (targeted to local governments and development districts/nonprofit entities in some cases).

Contact Eric Stockton
Appalachian Regional Commission
1666 Connecticut Avenue
Washington, DC 20009-1068
202-884-7752
estockton@arc.gov

Department of Agriculture–USDA

USDA-United States Forest Service

<http://www.fs.fed.us/ucf/program.shtml>

Urban and Community Forestry (UCF) is a cooperative program of the U.S. Forest Service that focuses on the stewardship of urban natural resources. With 80 percent of the nation's population in urban areas, there are strong environmental, social and economic cases to be made for the conservation of green spaces to guide growth and revitalize city centers and older suburbs.

USDA- Rural Development Agency (RDA)

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

The 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. They also have [energy efficiency grants](#) and loans for businesses in rural areas.

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 or supportive community facilities.

U.S. Department of Commerce–DOC

DOC-Economic Development Administration (EDA)

<http://www.eda.gov/index.htm>

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

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

Department of Defense–DOD

DOD Army Corps of Engineers (USACE)

<http://www.usace.army.mil/Missions/Environmental/BrownfieldsUrbanWaters/HelpingCommunities.aspx>

The 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.

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

DOD Office of Economic Adjustment

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

The 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.

Department of Energy–DOE

DOE Office of Energy Efficiency and Renewable Energy

<https://energy.gov/eere/office-energy-efficiency-renewable-energy>

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

DOE Building Technologies Office

<http://energy.gov/eere/buildings/building-technologies-office>

The 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.

Department of Housing and Urban Development– HUD

HUD Brownfield Economic Development Initiative (BEDI) and Community Development Block Grants (CDBG)

<https://www.hudexchange.info/programs/bedi/>

<https://www.hudexchange.info/programs/cdbq-entitlement/>

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 area properties.

- Community Development Block Grant Program
- Section 108 Loan Guarantee Program
- Brownfield Economic Development Initiative (check the availability of funds)
- HOME Investment Partnership Program
- Empowerment Zones, Promise Zones and Enterprise Communities Initiative
- Lead-Based Paint Hazard Control Grant Program

Department of the Interior–DOI

DOI National Park Service

<http://www.nps.gov/communities/index.htm>

The National Park Service's [Rivers, Trails and Conservation Assistance Program](#) and Federal Lands to Parks programs help communities create public spaces and preserve open spaces for communities to enjoy.

Office of Surface Mining Reclamation and Enforcement

<http://www.osmre.gov/contacts.shtm>

The Office of Surface Mining and Reclamation and Enforcement offers programs to areas that are impacted by mine-scarred lands through [Abandoned Mine Land Programs](#) and through the [VISTA/AmeriCorps programs](#).

Department of Labor–DOL

<http://www.doleta.gov>

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

Department of Transportation– DOT

<https://www.transportation.gov/grants>

The 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.

DOT Federal Highway Administration (FHWA)

<http://www.fhwa.dot.gov/environment/brownfields/>

The 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.

Department of the Treasury

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

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 property.

Environmental Protection Agency–EPA

EPA Brownfields Program

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

The EPA provides grants to fund assessments and cleanups of brownfield properties. Grants are also made to capitalize revolving loan funds to clean up brownfield properties or fund job training programs. Also be sure to check both the web resources for the EPA region in which your State is located, as well as contacts to the regional staff. Other regional websites may have some excellent information that could prove helpful on your projects.

EPA Technical Assistance to Brownfield Communities (TAB)

<http://www2.epa.gov/brownfields/brownfields-technical-assistance>

The TAB Program funds technical assistance to communities and other stakeholders on brownfield issues with the goal of increasing the community's understanding and involvement in brownfield cleanup and revitalization and helping to move brownfield properties forward toward cleanup and reuse. The TAB grantees funded through the TAB Program, among other things, serve as an independent resource assisting communities with community involvement, a better understanding of the health impacts of brownfield properties, science and technology relating to brownfield property assessment, remediation and property preparation activities, brownfield finance questions, information on integrated approaches to brownfield cleanup and redevelopment, facilitating stakeholder involvement, identifying sources of brownfield assessment and cleanup funding, understanding and complying with State brownfield and voluntary cleanup program requirements and facilitating redevelopment activities.

EPA The Brownfields and Land Revitalization Technology Support Center (BTSC)

<http://www.brownfieldstsc.org/>

Decision makers involved with preparing brownfield properties for productive reuse often require technical and legal assistance to fully understand the complexities of investigating and cleaning up contaminated properties. The EPA created the BTSC in 1998 to help decision makers:

- Evaluate strategies to streamline the site investigation and cleanup process,
- Identify and review information about complex technology options,
- Evaluate contractor capabilities and recommendations,
- Explain complex technologies to communities and
- Receive technical assistance.

EPA Office of Sustainable Communities

<http://www2.epa.gov/smart-growth>

This office offers tools and resources to help communities grow in ways that expand economic opportunity while protecting human health and the environment.

EPA [Hazardous Waste Cleanup Information \(CLU-IN\) Website](http://www.clu-in.org/)

<http://www.clu-in.org/>

The CLU-IN website provides information about innovative treatment and property characterization technologies to the hazardous waste remediation community. It describes programs, organizations, publications and other tools for federal and State personnel, consulting engineers, technology developers and vendors, remediation contractors, researchers, community groups and individual citizens. The property was developed by the EPA but is intended as a forum for all waste remediation stakeholders.

Federal Housing Finance Agency – (FHFA)

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

The FHFA 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. The FHFA 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 FHFA to attract more lenders to specific cleanup and redevelopment projects.

General Services Administration – (GSA)

<http://www.gsa.gov/portal/category/100000>

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

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

Small Business Administration – (SBA)

<http://www.sba.gov>

The 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.

Other National and Regional Resources–

Association of State and Territorial Solid Waste Management Official (ASTSWMO)

<http://astswmo.org/>

ASTSWMO's mission is to enhance and promote effective State and Territorial programs and to affect relevant national policies for waste and materials management, environmentally sustainable practices and environmental restoration. ASTSWMO's Brownfield Focus Group has published many published projects, which can be used as tools for States and communities.

Council of Development Finance Agencies (CDFA)

<http://cdfa.net/>

The CDFA was formed in 1982 with the mission to strengthen the efforts of State and local development finance agencies fostering job creation and economic growth through the use of tax-exempt and other public/private partnership finance programs. The CDFA offers training courses, industry summits, research, publications and other resources to members. Through a grant with the EPA, the CDFA also hosts brownfield marketplaces and can provide detailed funding advising to certain communities.

Delta Institute

<http://delta-institute.org/>

Delta Institute works in partnership with business, government and communities in the Great Lakes Region to create and implement innovative, market-driven solutions that build environmental resilience, economic vitality and healthy communities. Delta is a nonprofit organization with program work across its three strategic priority areas: energy, ecosystems and waste. To help demonstrate the market potential of sustainable businesses, Delta creates and manages innovative social enterprises, including the [P2E2 Center](#), a for-profit carbon credit trading platform, the Revere LLC, a for-profit energy efficiency lender and the [Rebuilding Exchange](#), a nonprofit materials reuse store.

THINK ABOUT...using the resources of the Delta Institute, whose geographic focus is the Great Lakes Region, and whose experience ranges from business to residential programs to capacity building and workforce development.

Delta Regional Authority (DRA) States' Economic Development Assistance Program (SEDAP) Funding

<http://dra.gov/funding-programs/states-economic-development-assistance-program/>

SEDAP provides direct investment into community based and regional projects that address the DRA's funding priorities.

Environmental Law Institute–Brownfields Center

<http://www.brownfieldscenter.org/index.cfm>

The Brownfields Center provides information on brownfield cleanup and redevelopment with a focus on the concerns and needs of community groups across the county. The Brownfields Center brings together a wide array of brownfield resources with the goal of increasing communication among groups and individuals working on brownfield issues. The resource database consists of hundreds of listings of governmental agencies, nonprofit organizations and for-profit companies working on brownfields across the country. Publications on a variety of issues provide information

on brownfields, while the Community Toolbox provides resources to enable communities to participate more fully and effectively in brownfield redevelopment. Finally, a visit to the bulletin boards or participation in an online seminar allows users to seek answers from brownfield experts, even on highly specific topics. The Brownfields Center is the central resource to consult on questions relating to all aspects of brownfield redevelopment.

Groundwork USA

<http://groundworkusa.org/>

The mission of the Groundwork USA network is to bring about the sustained regeneration, improvement and management of the physical environment by developing community-based partnerships that empower people, businesses and organizations to promote environmental, economic and social well-being.

The objectives of the Groundwork USA network are to:

- Increase the capacity of communities to improve and care for their local environment.
- Reclaim vacant and derelict lands for conservation, recreation and economic development.
- Clean up and care for neglected areas to signal community pride and rejuvenation.
- Return brownfields to economically productive use while restoring blighted landscapes with healthy environments.
- Integrate environmental education and job training into projects it undertakes.
- Engage business, government, nonprofits and communities to work together for sustainable environmental care and enhancement.
- Support business, nonprofit, government and community efforts to improve their local environment.
- Raise the profile of urban environmental improvements as part of a comprehensive approach to smart growth strategies and rejuvenation of inner city communities.
- Ensure projects look as good or better in five years as they do on the day of completion

International City County Management Association (ICMA)

<http://icma.org/en/icma/home>

The ICMA advances professional local government worldwide. The organization's mission is to create excellence in local governance by developing and fostering professional management to build better communities. The ICMA identifies leading practices to address the needs of local governments and professionals serving communities globally. They provide services, research, publications, data and information, peer and results-oriented assistance and training and professional development to thousands of city, town and county leaders and other individuals and organizations throughout the world. The management decisions made by ICMA's members affect millions of people living in thousands of communities, ranging in size from small towns to large metropolitan areas.

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

EPA-Interstate Technology Regulatory Council (ITRC)

<http://www.itrcweb.org/Guidance>

The ITRC is a public/private coalition working to reduce barriers to the use of innovative environmental technologies that reduce compliance costs and maximize cleanup efficacy. The ITRC produces documents and training that broaden and deepen technical knowledge and

expedite quality regulatory decision making, while protecting human health and the environment. The ITRC achieves its mission through its technical teams, which are composed of environmental professionals, including State and federal environmental regulators, federal agency representatives, industry experts, community stakeholders and academia. Since 1995, the ITRC has published hundreds of documents and reached tens of thousands of participants through training courses on hundreds of topics. With private and public sector members from all 50 States and the District of Columbia, the ITRC truly provides a national perspective.

National Association of Conservation Districts (NACD)

<http://www.nacdnet.org/>

State Directory: <http://www.nacdnet.org/general-resources/conservation-district-directory/>

The NACD is the non-profit organization that represents America's 3,000 conservation districts and the 17,000 men and women who serve on their governing boards. Conservation districts are local units of government that carry out natural resource management programs at the local level. Districts work with millions of cooperating landowners and operators to help them manage and protect land and water resources on all private lands and many public lands in the United States.

The NACD's mission is to serve conservation districts by providing national leadership and a unified voice for natural resource conservation.

Among the goals of the organization are to:

- Represent districts as their national voice on conservation issues;
- Provide useful information to conservation districts and their State associations;
- Build partnerships with federal and State agencies and other organizations in order to carry out district priorities and programs;
- Analyze programs and policy issues that have an impact on local districts; and
- Offer needed and cost-effective services to districts.

National Association of Development Organizations (NADO)

<http://www.nado.org/>

Since 2001, the NADO has been dedicated to assisting regional development organizations across the country. Through their Research Foundation, they have 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.

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

National Association of Local Government Environmental Professionals (NALGEP)

<http://www.nalgep.org/nalgep-projects/brownfields-showcase-communities.html>

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

Northeast-Midwest Institute (NEMWI)

<http://www.nemw.org/>

The NEMWI is a Washington, D.C. based nonprofit and nonpartisan research, education and policy organization dedicated to economic vitality, environmental quality and regional equity for Northeast and Midwest States. Many of the region's historic cities—critical centers of industry, transportation and American ingenuity—suffer from population decline, high unemployment and low economic investment. The NEMWI's Revitalizing Older Cities Initiative taps long-standing NEMWI policy expertise in brownfields, energy efficiency and affordability, manufacturing revitalization, transportation and infrastructure, livable communities and economic development to identify critical policy needs and support solutions to shared problems in the region's cities. The NEMWI has extensive brownfield resources on its website, though its work is not limited to revitalization issues, but covers a wide range of issues affecting this area of our country.

Smart Growth America

<http://www.smartgrowthamerica.org/about-us>

This organization is dedicated to researching, advocating for and leading coalitions to bring smart growth practices to communities across the country. Smart Growth America has workshops, research papers and guides that can be accessed by those wanting to implement Smart Growth concepts in their community.

Sustainable Community Development Group (SCDG)

<http://sustainablecommunitydevelopmentgroup.org/>

The SCDG's mission is lasting and measurable results that address the social, economic, health and environmental problems resulting from pollution, sprawling patterns of development and disinvestments in places around the nation and the globe. They specialize in community-building programs that address diverse populations, communities of color and low income, the under-resourced and those living in areas experiencing environmental, health and economic under-investment. The SCDG offers a comprehensive program of research, analysis, technical assistance, outreach and education designed to enhance the effectiveness of our partners, clients and allies while maintaining the integrity of the environment and contributing to the development of thriving communities. Their focus is where environmental quality and public health meets land use, growth and economic development. The goals are education and strategies that help develop leaders who understand how public and private redevelopment works and can be used to address health and environmental concerns as well as social and economic concerns.

University of Louisville Center for Environmental Policy and Management (CEPM)

<http://cepm.louisville.edu/>

The University of Louisville CEPM seeks to provide research and technical assistance to local, State and tribal governments, businesses and nonprofit organizations regarding sustainable environmental policy and program development and evaluation. The University of Louisville's CEPM has a [series of practice guides](#) that can be utilized for brownfield revitalization and urban renewal projects.

Urban Land Institute (ULI)

<http://uli.org/>

The ULI provides leadership in the responsible use of land and in creating and sustaining thriving communities worldwide. The ULI is committed to:

- Bringing together leaders from across the fields of real estate and land-use policy to exchange best practices and serve community needs;
- Fostering collaboration within and beyond ULI's membership through mentoring, dialogue and problem solving;
- Exploring issues of urbanization, conservation, regeneration, land use, capital formation and sustainable development;
- Advancing land-use policies and design practices that respect the uniqueness of both the built and natural environments;
- Sharing knowledge through education, applied research, publishing and electronic media; and
- Sustaining a diverse global network of local practice and advisory efforts that address current and future challenges.

Other Financial Mechanisms for Assessment, Cleanup and Redevelopment of Contaminated Property

Tax Increment Financing (TIF): A Brief Overview

One approach to financing the cleanup and redevelopment of contaminated properties is the creation of a 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 and can pay for annual debt service on construction bonds.

Energy and Mineral Severance Taxes: A Brief Overview

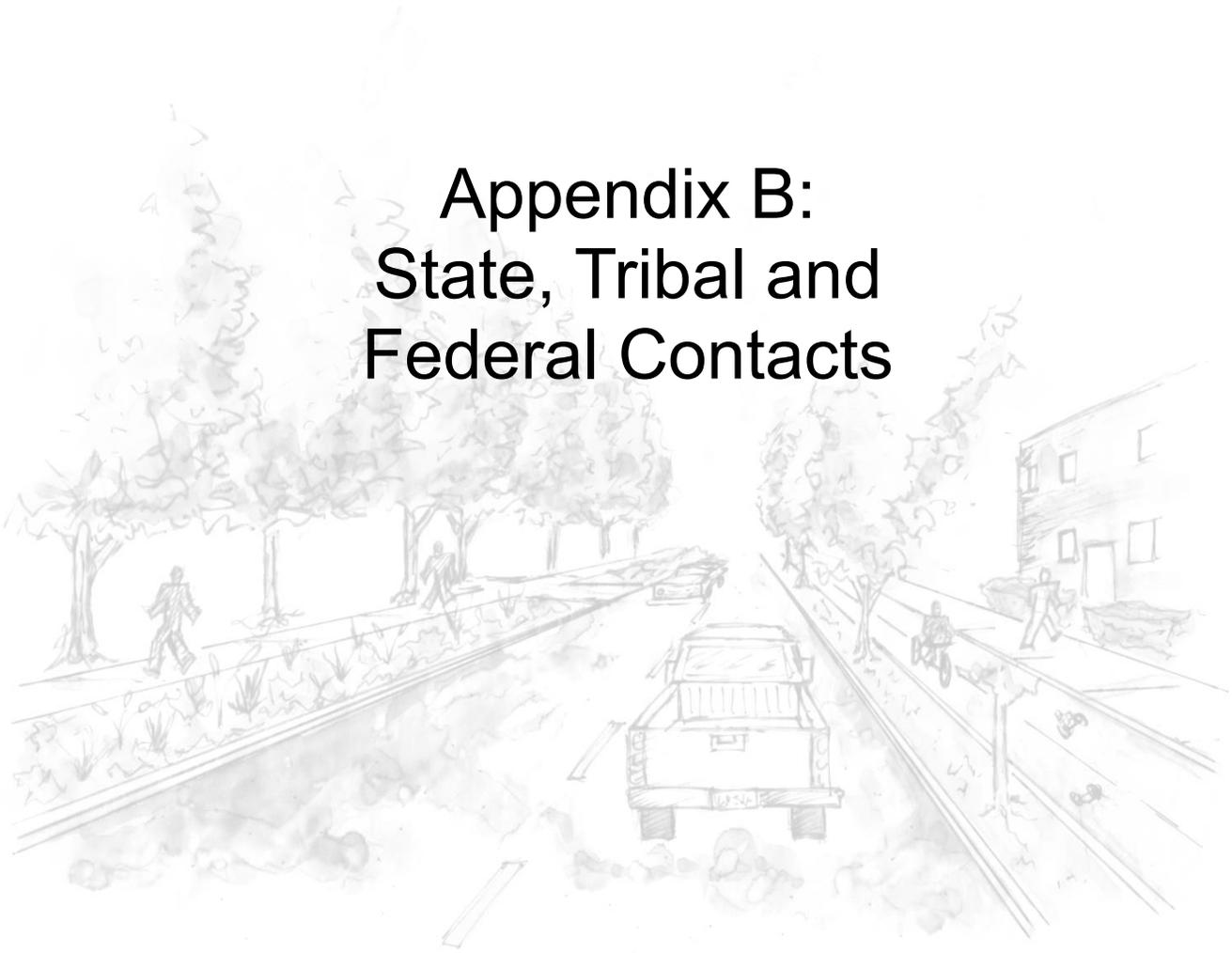
Energy and mineral severance taxes are excise taxes on natural resources "severed" from the earth. They are measured by the quantity or value of the resource removed or produced. In the majority of States, the taxes are applied to specific industries, such as coal or iron mining and natural gas or oil 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.

Crowd Source Funding

Crowd funding is the practice of funding projects by raising money from a large number of people, typically via the Internet. Do a search on the crowd funding website on the Internet and see if any of the platforms will serve your purposes.

Appendix B: State, Tribal and Federal Contacts



State and Tribal Program Information

State and Tribal response programs continue to be at the forefront of brownfields cleanup and redevelopment, as both the public and private markets recognize the responsibilities and opportunities of these response programs in ensuring protective and sustainable cleanups. The increasing number of properties entering into voluntary response programs emphasizes the States' and Tribes' growing role in brownfields cleanup. Regional, Tribal and State program information can be found on the [EPA's Brownfields State and Local Tribal Information Page](#).

[State and Territorial Brownfields and Voluntary Response Programs 2014](#)

The "State Brownfields and Voluntary Response Programs: An Update from the States" report explores the evolving landscape of State environmental, financial, and technical programs, including the incentives designed to promote brownfields cleanup and redevelopment. This user-friendly tool looks at multiple components of State brownfields and voluntary response program(s) and provides a synopsis of each State's response program(s) and contact information.



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Nation's Environmental Stewardship Since 1974