# Hidden Potential in Brownfields:

## Tactical guide to evaluate, plan, and implement successful revitalization projects

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INTRODUCTION

# Hidden Potential in Brownfields:

## Tactical guide to evaluate, plan, and implement successful revitalization projects

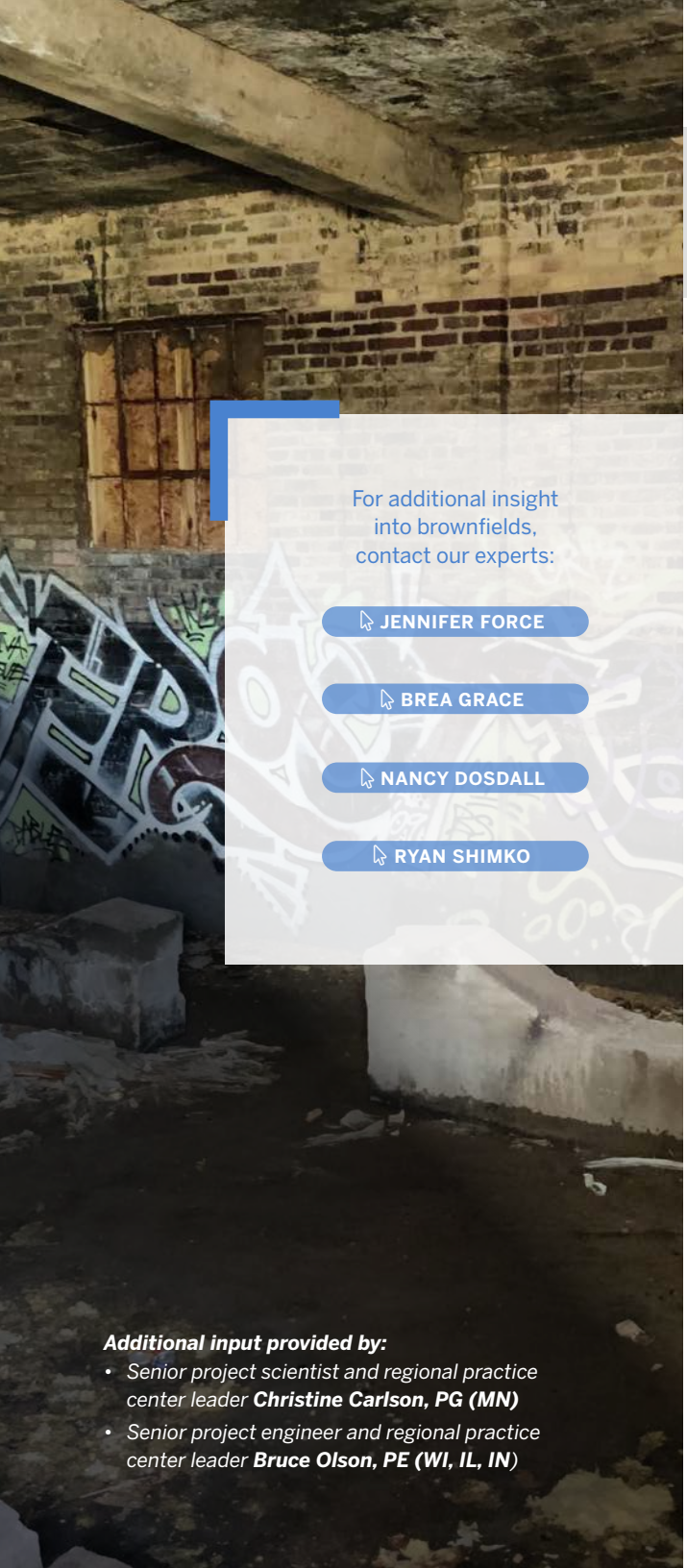
Brownfields are sites with known or possible contamination that inhibits the property's potential reuse, and no two are alike. They can range in size and complexity – from a vacant building on Main Street or a former school building, to a corner gas station or abandoned factory along a riverfront. Undeveloped land historically used for some purpose that discourages reuse may also be a brownfield site.

Brownfields can be intimidating and even pose a danger to your community if left untouched, but when developed strategically, they can have positive long-term economic and environmental impacts.

This eBook explores the immense potential and long-standing benefits of redeveloping and revitalizing brownfields through a concise and easy-to-understand guide. The following pages are full of tools and resources, proven tips for what to expect or avoid, and creative solutions to lead you toward a successful redevelopment project.

*Short Elliott Hendrickson Inc. (SEH®) is a multidisciplined, professional services firm made up of 800+ engineers, architects, planners, and scientists who provide complex solutions to clients throughout the U.S. With offices across the Midwest, Colorado, Virginia, and Wyoming, SEH focuses on improving mobility, improving infrastructure, engineering clean water, and creating better places. We are guided daily by our core purpose of Building a Better World for All of Us®.*

## Insights



For additional insight into brownfields, contact our experts:

- JENNIFER FORCE
- BREA GRACE
- NANCY DOSDALL
- RYAN SHIMKO

***Additional input provided by:***

- *Senior project scientist and regional practice center leader* ***Christine Carlson, PG (MN)***
- *Senior project engineer and regional practice center leader* ***Bruce Olson, PE (WI, IL, IN)***

# About the Experts

### JENNIFER FORCE, PG (MN)

Jennifer is a senior project scientist with a diverse background in site assessment and cleanup. She assists clients with due diligence through Phase I Environmental Site Assessments (ESAs), Phase II ESAs, soil vapor investigations, cleanup plan development, and securing liability assurances and regulatory approvals. Over her 30-year career, Jennifer has secured over $23 million in investigation and cleanup grants from local, state, and federal programs.

### NANCY DOSDALL, AICP, LEED GREEN ASSOCIATE

Nancy is a senior planner and project manager with 35+ years of experience in land use planning and entitlement. She is proficient in public engagement and finding common ground amongst stakeholders to develop community-supported plans.

### BREA GRACE, AICP, NCI

Brea is a certified urban and land use planner with 25 years of experience in both public and private sectors. She specializes in urban and waterfront redevelopment and is highly adept at public outreach, project financing, grant writing, and economic development. Brea is passionate about building better communities and leveraging funding sources to help communities achieve their project goals.

### RYAN SHIMKO, PE (GA, IN, KY, TN, WI)

Ryan is a senior project engineer with over a decade of comprehensive experience in environmental due diligence, site assessments, construction, remediation and redevelopment, solid waste, permitting, and regulatory compliance and coordination. Ryan's broad experience uniquely positions him to adeptly guide clients through complex environmental and regulatory processes while keeping their project vision at the forefront. His expertise includes Phase I and Phase II environmental site assessments, environmental permitting, site investigations and remedial design, construction quality assurance and administration, landfill design and construction, vapor mitigation design, and stormwater pollution prevention.

# 9 Benefits of Brownfield Redevelopment

Nearly every community has land parcels that were once bustling and productive but are now empty, vacant, or underutilized. Many of these properties are located on prime real estate near city centers or along transportation corridors where infrastructure is already in place. Higher concentrations of these properties tend to be located in urban areas, and as demand for real estate increases, so does their reuse value.

Research shows that brownfield redevelopment offers significant community, economic, and environmental benefits compared to the development of land outside of the urban core or on previously undeveloped properties. The value of redeveloping brownfield sites can be limitless. **Here are nine proven benefits.**

# COMMUNITY

On average, communities experience a **5–15% increase** in residential property values.


1

**Utilizes existing infrastructure.** Using existing roads, utilities, and other infrastructure is more efficient than extending or creating new infrastructure. Adding new services requires a large upfront investment and increases maintenance costs a community must fund on an ongoing basis.

2

**Creates better places.** Blighted, abandoned, and depressed brownfield properties negatively impact surrounding neighborhoods. Revitalizing these areas naturally correlates to higher property values, increased tax base, and greater overall investment in the community – resulting in a safer place to live and work.

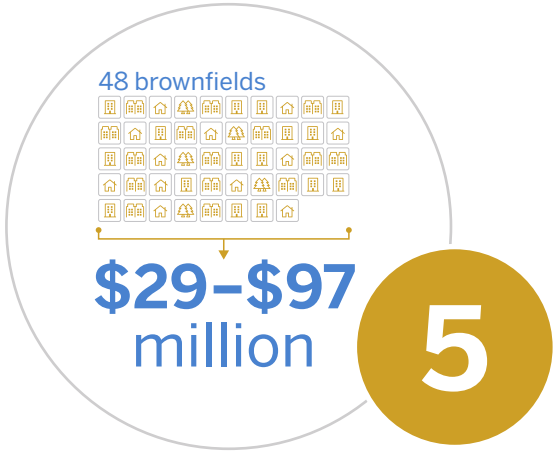
3

**Inspires community involvement.** Community members and stakeholders are often much more invested in these redevelopment projects because they typically align with the community's needs, provide an opportunity to create new or improved community amenities nearby, and help achieve the community's vision for the future.

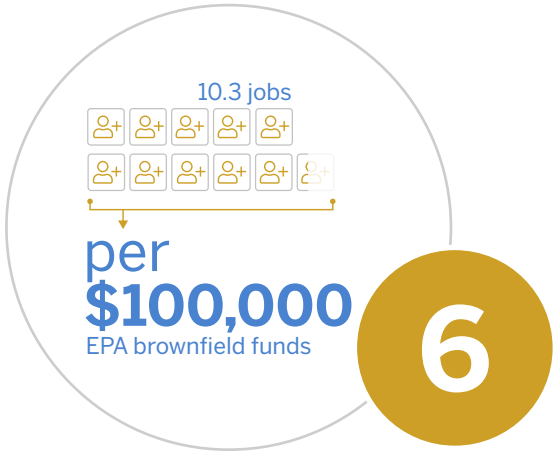
# ECONOMY

The EPA has estimated that for each $1 of brownfield funding leveraged, over $20 in private investment is made in brownfield sites, and for every $100,000 of brownfields funding, 10+ jobs were created.

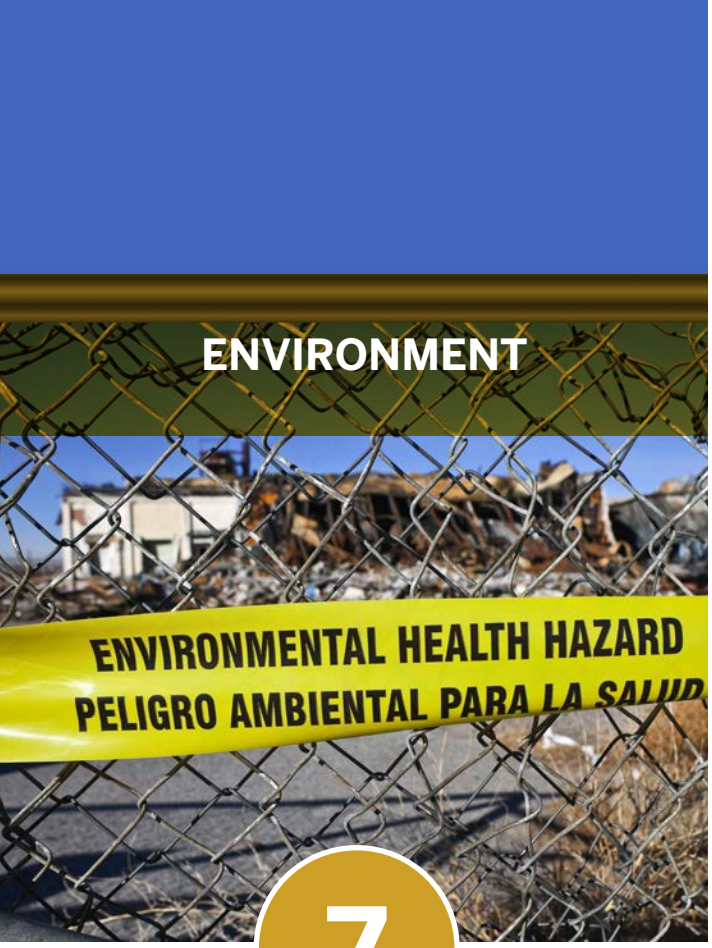

**Stimulates the economy.** According to the U.S. Environmental Protection Agency (EPA), $20.43 was leveraged for every $1 of EPA brownfield funds spent on assessment and cleanup activities, which comes from private and public investment in new uses at a brownfield site. Reuse of these sites promotes business expansion, job creation, and tax revenue from new economic activity.




**Creates new revenue sources.** Redeveloping brownfields offers communities and developers the chance to bring properties back into productive use, which can help meet market demand for more commercial, industrial, and residential spaces – while creating new revenue sources. In a study of 48 brownfields, the EPA shares that local governments generated $29–$97 million in additional tax revenue in the first year after cleanup.




**Generates job growth.** According to the EPA, 10.3 jobs were leveraged per $100,000 of EPA brownfield funds spent on assessment and cleanup activities. An added benefit is that many of the jobs created are more accessible to people living in nearby neighborhoods, making it easier for them to walk, bike, or use public transportation to get to work.

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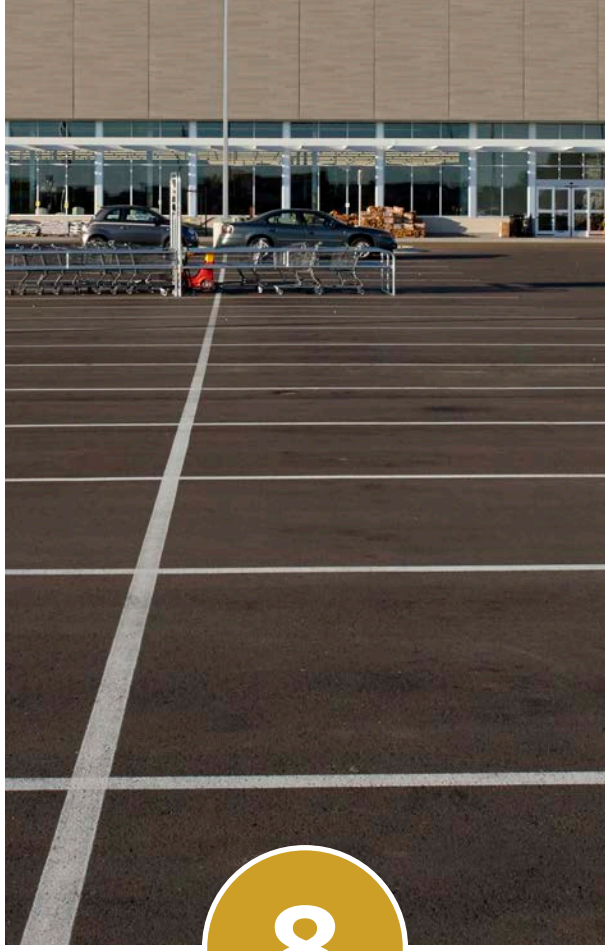
**Protects public health.** Cleaning up contaminated sites or otherwise appropriately managing the contaminant conditions helps to protect both human health and the environment.



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**Reduces expansion of impervious surfaces.** A study by the EPA shares that each redeveloped brownfield acre of land saves around 1.3–4.6 acres of undeveloped land from new impervious surface expansion, which helps contain stormwater runoff and prevent the spread of contaminants.

9

**Decreases vehicle miles traveled.** Since brownfields are often found in densely developed urban areas, redeveloping these sites can minimize energy consumption and transportation-related emissions. According to the EPA, redeveloped brownfields resulted in a 9–10% decrease in residential vehicle miles traveled and a 25–33% decrease in job-related vehicle miles traveled – meaning less carbon dioxide emissions.

# Reuse Options: Matching Potential Sites to Community Needs

It is important to have a reuse vision for a brownfield site that aligns with community desires and needs; this community reuse vision will aid in obtaining funding and leveraging private investment on the subject property.








## Evaluating reuse options

The site may have been the home of a manufacturing plant, but remediation could open the doors to new types of uses such as businesses, industries, residential buildings, solar redevelopments, green spaces, or other identified community needs. Existing community plans (such as comprehensive plans or land use plans) and community engagement are great starting points. You can incorporate what you learn through community engagement and outreach into reuse concepts to share with elected officials, funding agencies, and potential developers.

Collaborating with planners and economic development officials during the visioning and redevelopment planning phase is a vital step in the process. If part of the vision includes commercial and/or industrial uses, it can be particularly helpful to use market research to understand the options you have and what the market will support.

Onalaska's Great River Landing Master Plan showcases the benefits of master planning aligning with the community's vision and needs.

**CASE STUDY**

> After stakeholder and community engagement, it helps to gather information to determine which reuse options are most viable and engage with possible partners on how to achieve the vision. Building an implementation strategy backed with market data and strong partnerships helps get positive results.

**NANCY DOSDALL**
SENIOR PLANNER AND PROJECT MANAGER

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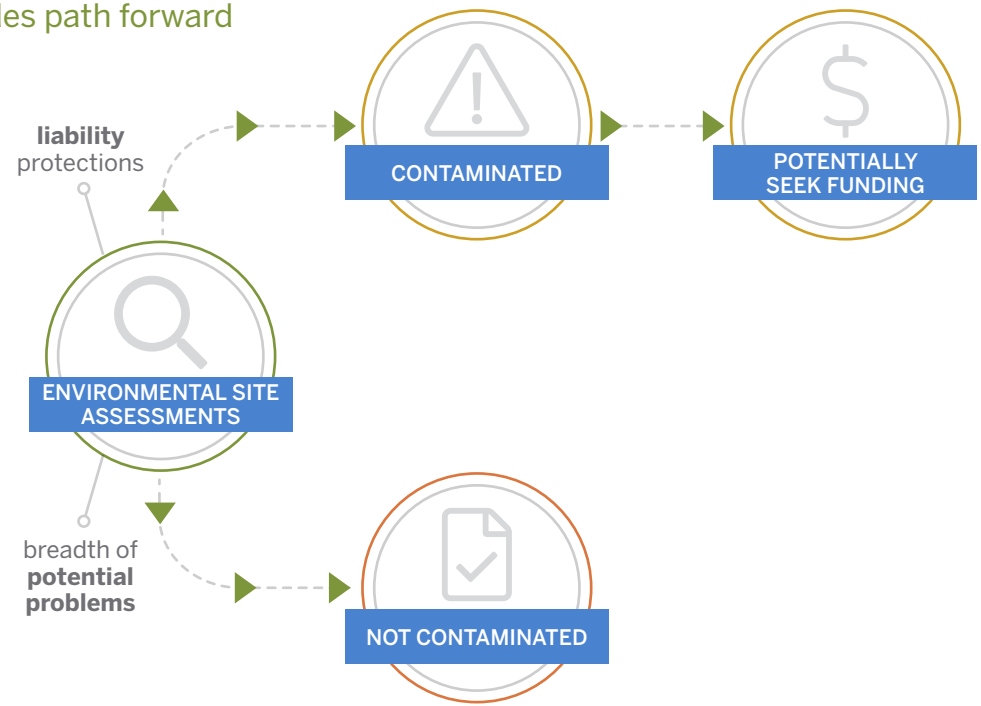
# Digging into Due Diligence and Site Development

With an increased interest in and understanding of environmental stewardship, there is now greater emphasis on making sure projects protect our natural resources. Developing a solid understanding of a brownfield's history and potential contaminants helps avoid surprises from unexpected conditions during redevelopment. At the same time, it's important to safeguard from potential future environmental liabilities.


To start, you'll need to understand what it will take to redevelop the property. Environmental site assessments are a critical first step in protecting your liability by revealing the depth and breadth of a potential problem and associated contamination. You might learn that the site is not contaminated, which may help ease the minds of interested parties. Or you may find that contamination is present at the site, and you can seek funds to help cover the cost of cleanup. In either case, the path forward starts with gathering information to guide decision making.

## ESA guides path forward




> By assessing risks and mitigation strategies, you can choose the best development for a property, minimizing uncertainty before investing.

RYAN SHIMKO
SENIOR ENVIRONMENTAL ENGINEER

# Step 1

## INVESTIGATE THE HISTORY WITH A PHASE I ENVIRONMENTAL SITE ASSESSMENT (ESA)

A Phase I ESA is a historical and current condition environmental review. It helps determine what are called "recognized environmental conditions," or RECs, associated with your site. In many cases, it isn't obvious at first glance that a property could be contaminated. Additional research is often needed to identify potential concerns and uncover the full history of the site. A Phase I ESA includes:

- Interviews with owners, operators, and occupants
- Review of historical documents, government records, files, and environmental liens
- Visual inspections of the property and adjoining properties
- A final report documenting the findings

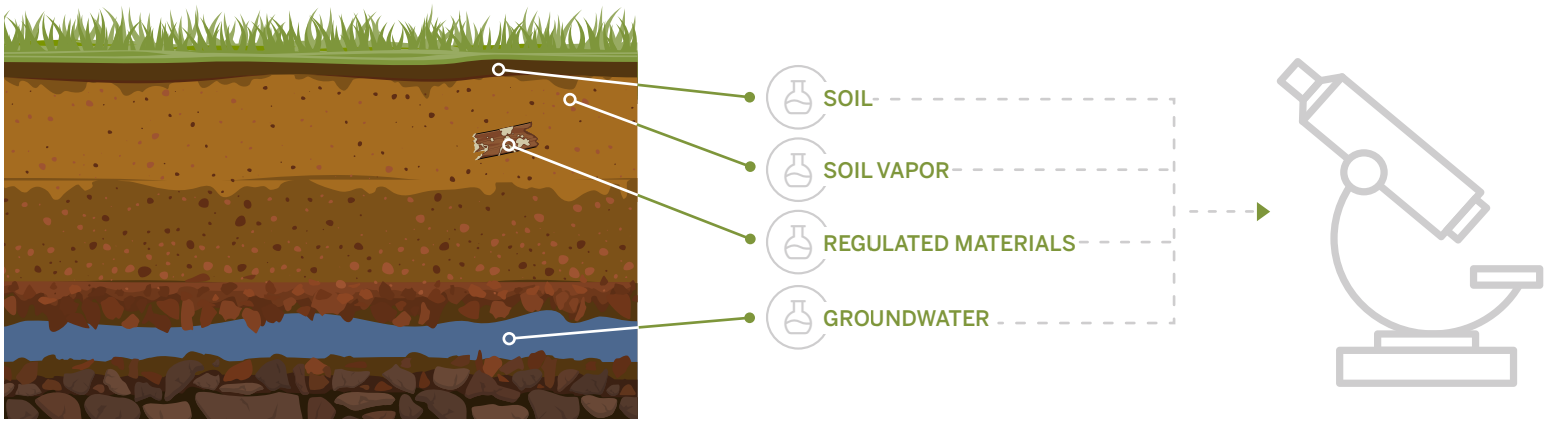

## Innocent Landowner Defense Explained:

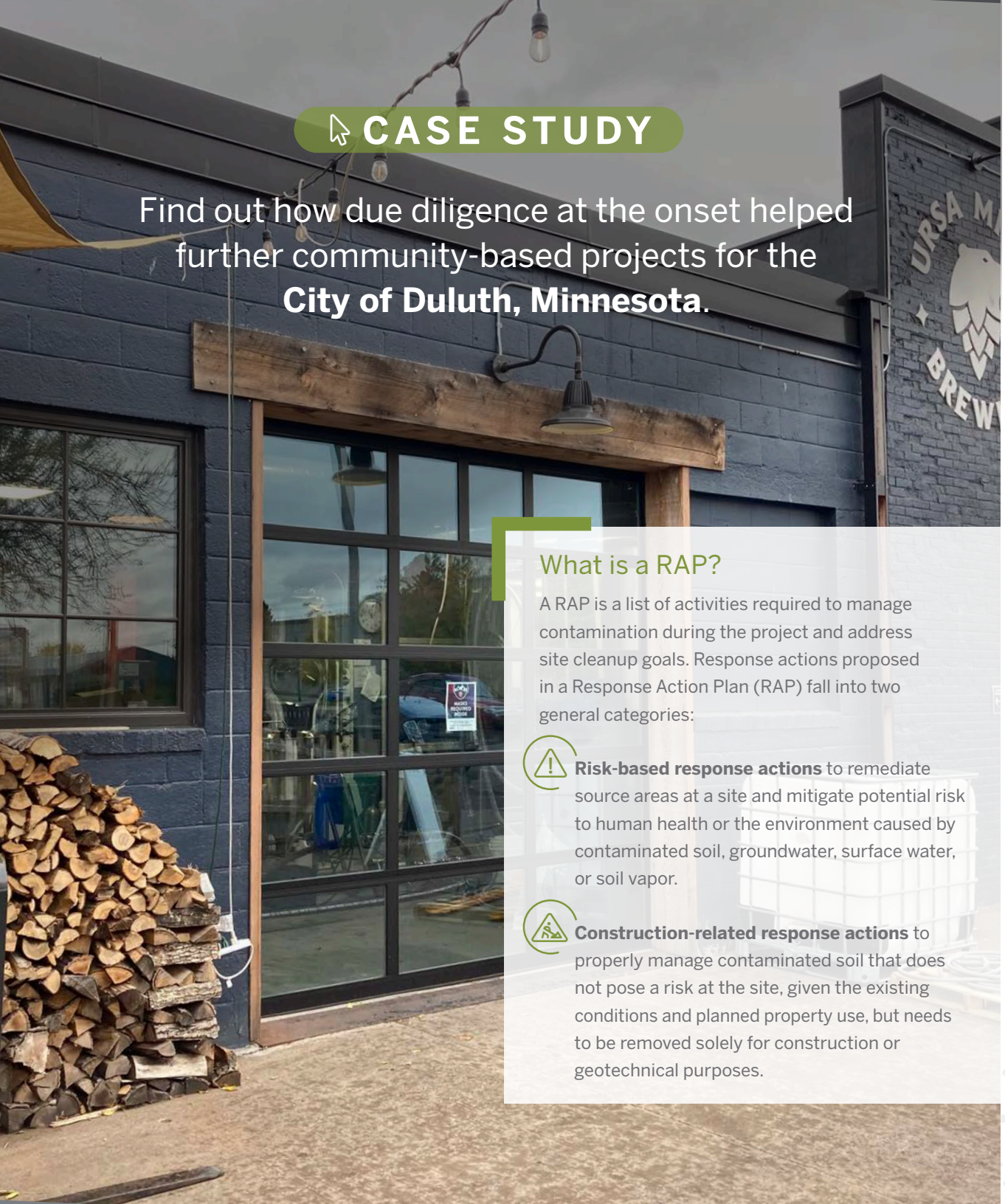
When the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or Superfund went into effect in 1980, liability for contamination was "strict and several," meaning any owner or operator at a Superfund site could be held responsible for investigation or cleanup of the contamination regardless if they caused the contamination. Questions regarding liability discouraged redevelopment of brownfield sites, and by the mid-1990s, the EPA launched the Brownfields Initiative to encourage redevelopment of abandoned or underused industrial or commercial sites. The EPA has since established several landowner defenses which provide protection from Superfund liability to landowners who meet certain criteria. Conducting a Phase I ESA is the first step in protecting your liability.


# Step 2

## DIG DEEPER WITH A PHASE II ESA

If your Phase I ESA uncovers a dirty past, or the possibility of one, a Phase II may be your next step. Phase II field investigations dig deeper. They include boring into the earth and collecting a variety of different samples (e.g., soil, groundwater, soil vapor, sediment, and/or regulated materials). Samples are analyzed in a laboratory to determine if contamination is present.





## CASE STUDY

Find out how due diligence at the onset helped further community-based projects for the **City of Duluth, Minnesota**.

### What is a RAP?

A RAP is a list of activities required to manage contamination during the project and address site cleanup goals. Response actions proposed in a Response Action Plan (RAP) fall into two general categories:

- **Risk-based response actions** to remediate source areas at a site and mitigate potential risk to human health or the environment caused by contaminated soil, groundwater, surface water, or soil vapor.
- **Construction-related response actions** to properly manage contaminated soil that does not pose a risk at the site, given the existing conditions and planned property use, but needs to be removed solely for construction or geotechnical purposes.

The Phase II ESA helps define the magnitude and extent of contamination that could be encountered during site development. This information is used to prepare plans or construction specifications to provide environmental guidelines identifying potentially impacted materials and how to handle them appropriately – before digging into the site.

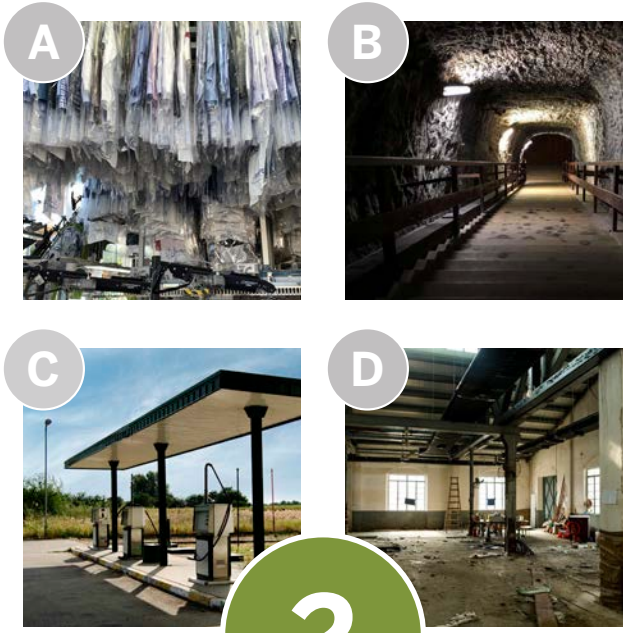
If samples from the Phase II investigation detect contamination, you'll need to prepare a Response or Remedial Action Plan or equivalent report in your state. Construction-related response actions will address how to effectively manage contaminated materials during site construction or redevelopment. There are also risk-based response action plans which address reducing the source of and exposure to contamination.

The cost of a Phase II can add up quickly, so it is important to tailor sampling to the development plan and perform testing within state-required guidelines. Widespread testing across the entire site is often not cost-effective or necessary, but prioritizing testing areas based on site use history and proposed future use can help control costs.

The following 15 steps can help ease your mind and guide decision making during the due diligence and site development process. An experienced environmental consultant will help walk you through this process and answer questions along the way.

1

**Do your research.** Review historical research and prior investigation reports to learn what contaminants may be present at your site. Partner with an environmental consultant to evaluate potential types of contamination that may be present.

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**Start early.** Begin your project on the right foot and start the environmental process early with a Phase I ESA. If purchasing the property is under consideration, complete the Phase I before doing so; you will save money in the long run and streamline future phases of your project.

*Common former land uses and their legacy contaminants:*

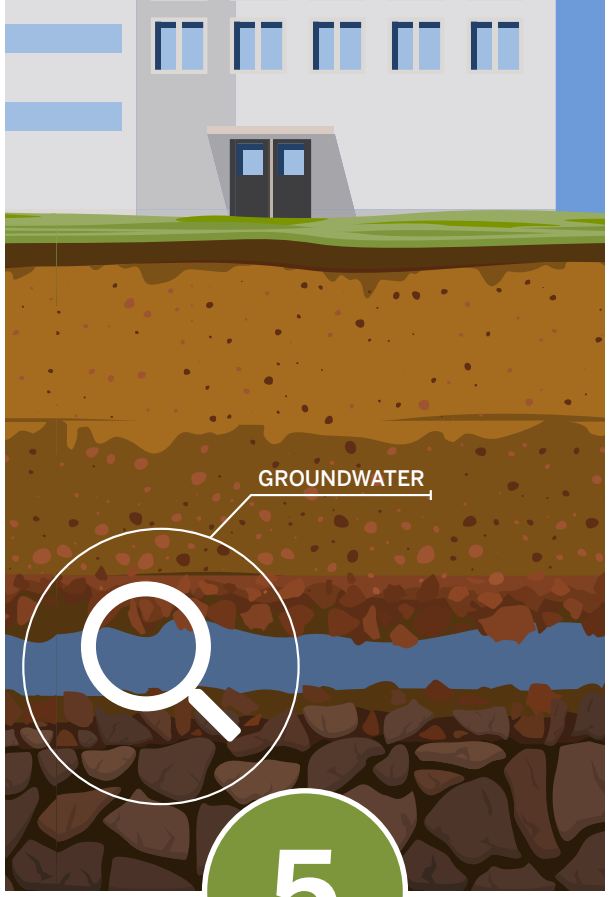
- A Dry cleaners = Chlorinated solvents
- B Abandoned mine = Mercury
- C Former gas station = Petroleum
- D Machine shop = Solvents, metals, and petroleum

3

**Strategize.** The best redevelopment projects involve a seamless team integration. Partner with an environmental consultant who can guide the environmental process from initial steps through final completion. They will strategize the best solutions for contamination issues and make sure those strategies are integrated into the overall redevelopment design, while also working with regulatory agencies to obtain necessary approvals.

4

**Minimize impacts.** Not only is it important to understand what contaminants are present, but concentration levels must meet regulatory criteria and be assessed to determine the magnitude of potential impacts. It's important to evaluate site and subsurface conditions (e.g., soil type and depth; direction and flow of groundwater) to assess their impact to movement of contamination through the subsurface at the site.

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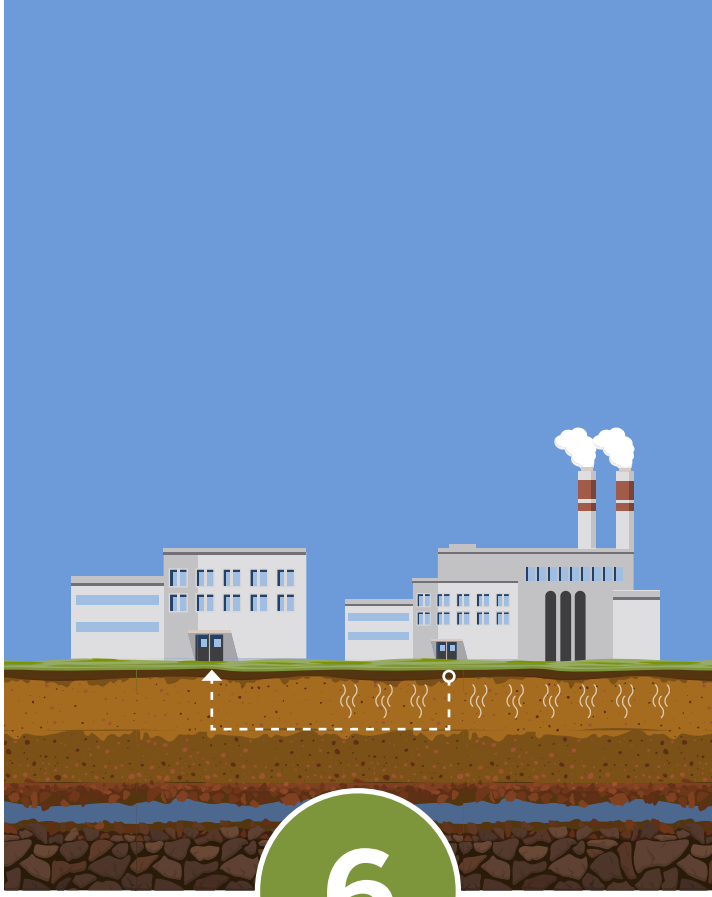
**Evaluate need for groundwater monitoring.** Groundwater impacts must also be considered with respect to site plans. The regulatory agency may require groundwater monitoring frequency and duration that overlaps with construction work on the site. When installing site monitoring wells, consider locations of planned site features to coordinate well placement (not only location but also elevation) to align with the future plan for the site.



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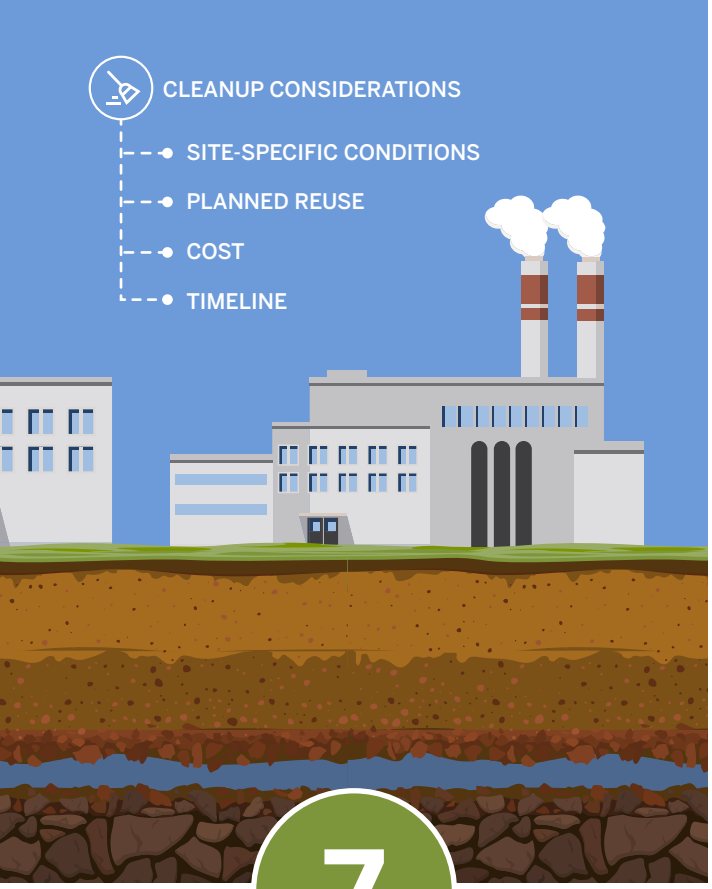
**Assess vapor intrusion.** Volatile organic compounds (VOCs) may pose a risk by migrating through building foundations/slabs and potentially impacting building occupants. Check with your regulatory agency for their most up-to-date guidance on vapor intrusion assessments and required actions. If vapor intrusion is possible at your site, consider incorporating vapor mitigation systems into new building construction as this can be more cost-effective and easier to construct versus retrofitting later. For existing building reuse, installing a vapor mitigation system into the existing structure may be the best path forward.

LEARN MORE ON PAGE 23

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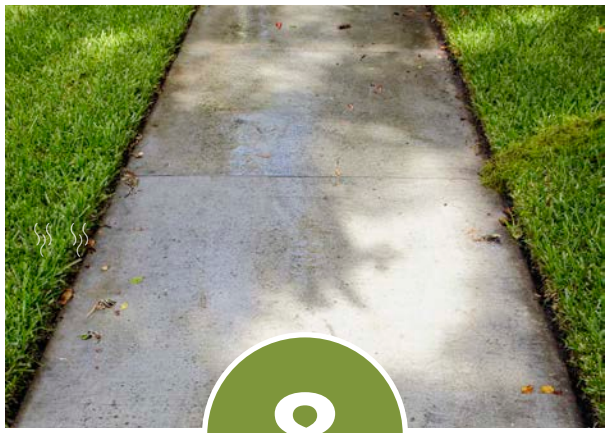
**Tailor cleanup to site-specific needs.** When evaluating potential cleanup options, also consider site-specific conditions, planned reuse, and the cost and timeline of each option. Time may be a higher priority than cost to make a project/deal successful; consult with your stakeholders (e.g., potential developer, local and state government bodies, and funding or regulatory agencies) to understand their priorities and/or requirements.



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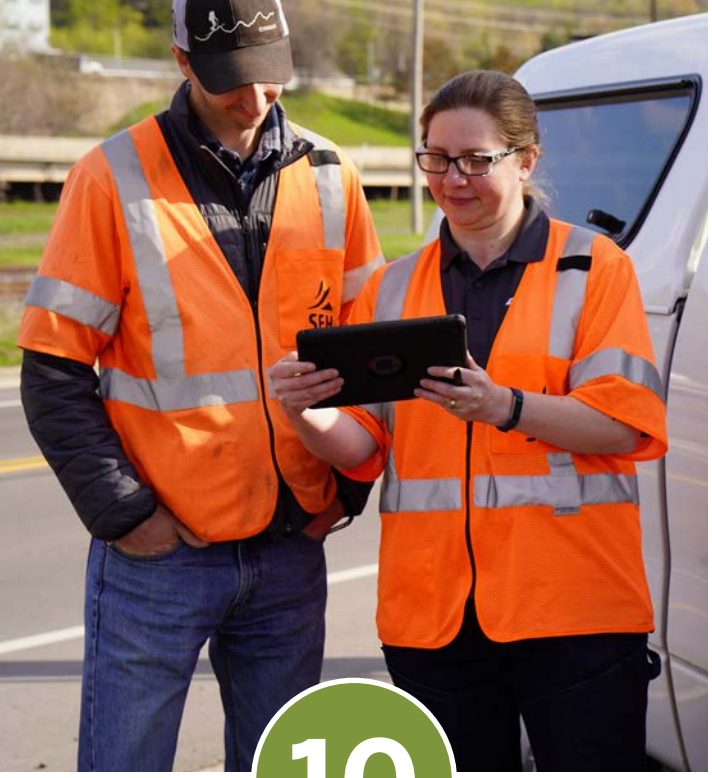
**Determine what can stay.** Certain contaminants may be able to remain in place depending on the planned reuse of the site. For example, a paved parking lot, sidewalks, or building slabs can be considered part of a response action for the site and provide a cap to prevent direct contact with the impacted soils below. Use the site reuse plan to guide remediation efforts.

9

**Evaluate creative design solutions.** Explore options with your consultant, such as developing greenspace in areas where fill soil is structurally unsuitable for development. Options might include raising grade, capping impacted soil, shifting uses away from higher levels of contamination, adding naturally occurring or adapted microbes to the soil to degrade organic contaminants, or even using alternative foundation systems to leave impacted fill soil in place.



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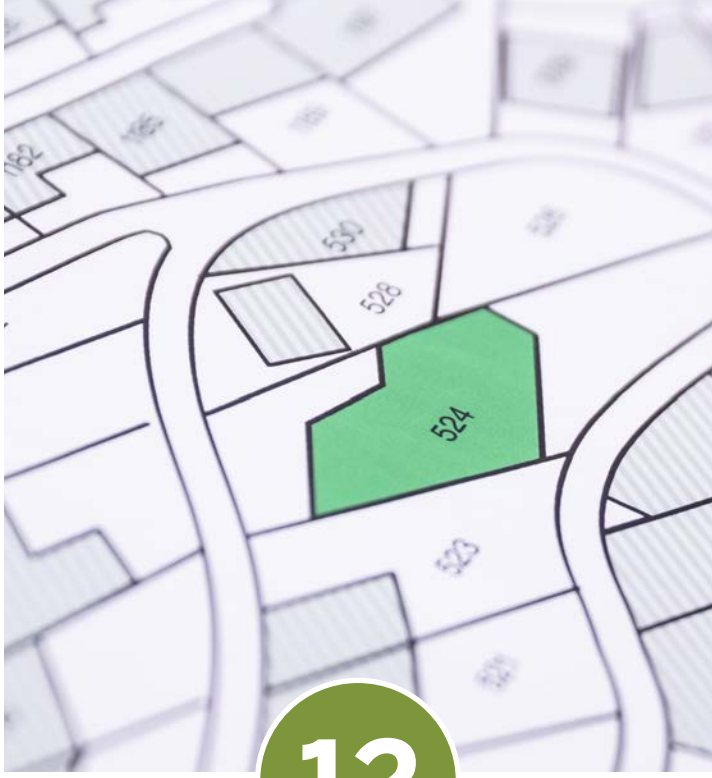
**Expect the unexpected.** Even with thorough preparation, contaminated redevelopment sites carry a possibility of a surprise. When unforeseen conditions emerge, your environmental consultant can help you respond to issues as they arise and keep your project on schedule.

## 11

**Allow time to address requirements.** Sometimes high concentrations of contaminants are identified that require extensive remediation or involve a sizable portion of the site. Consider site-specific factors (e.g., contaminant concentrations and distribution) and planned site reuse, while also allowing time to address all regulatory, policy, and program requirements.




## 12

**Evaluate site options.** If warranted, consider dividing the property into separate parcels to allow development to move forward in one area while addressing contamination in another portion.

13

**Evaluate pros and cons of remediation.** Work with your environmental consultant to examine the pros and cons of investigating and remediating (or not remediating) site contaminants. The type of contamination can influence the potential brownfield reuse and remediation required. Be sure to reach consensus on established cleanup protocols and approach in collaboration with your regulatory agency.


14

**Consider long-term maintenance.** In some cases, depending on the contaminant, remediation efforts may be ongoing and involve additional maintenance even after the project is complete (e.g., needing to operate a vapor mitigation system over the life of the building). If necessary, be sure to include long-term maintenance costs in your project plan.

15

**Keep a careful eye on the construction process.** Construction monitoring techniques (e.g., field screening and analysis) will help separate contaminated materials from non-contaminated materials on site. Your environmental consultant will track and document proper methods for the handling, treatment, and fate of the contaminated material, as well as end point site conditions and additional sample analyses. Once complete, you'll submit a report to the regulatory agency requesting documentation stating that the RAP was successfully implemented. This documents that the site is ready for the proposed use.


> In some cases, voluntary parties can be released from liabilities of cleaning up beyond their property boundaries, or from extensive onsite cleanup efforts, as long as exposure pathways are addressed.

**JENNIFER FORCE**
SENIOR PROJECT SCIENTIST

## CASE STUDY

Learn how a site assessment, remediation plan, and cleanup strategies helped transform a contaminated site into a housing development in **Golden, Colorado**.

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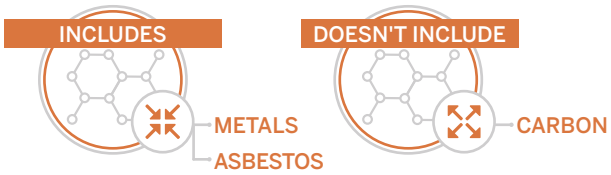
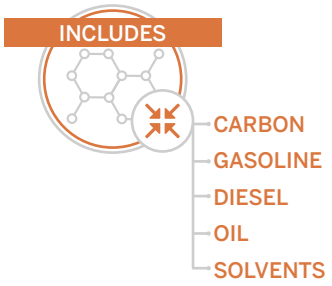
# Contamination Types Explained

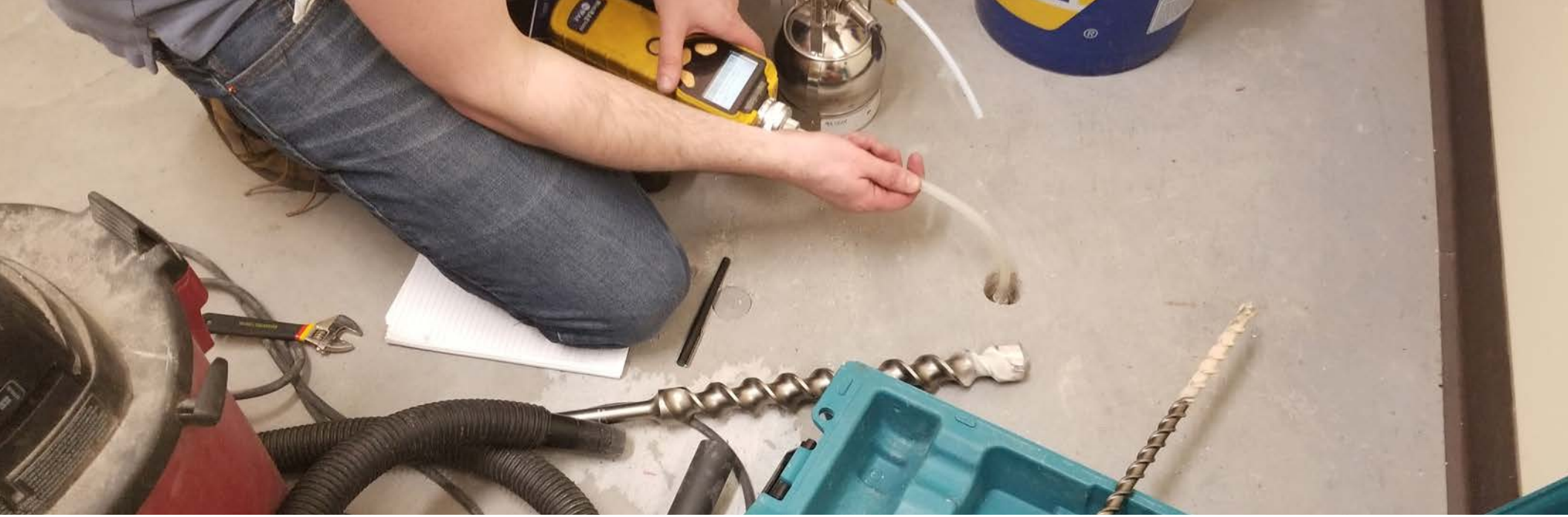
Contaminants are classified into two primary categories: inorganic compounds and organic compounds.

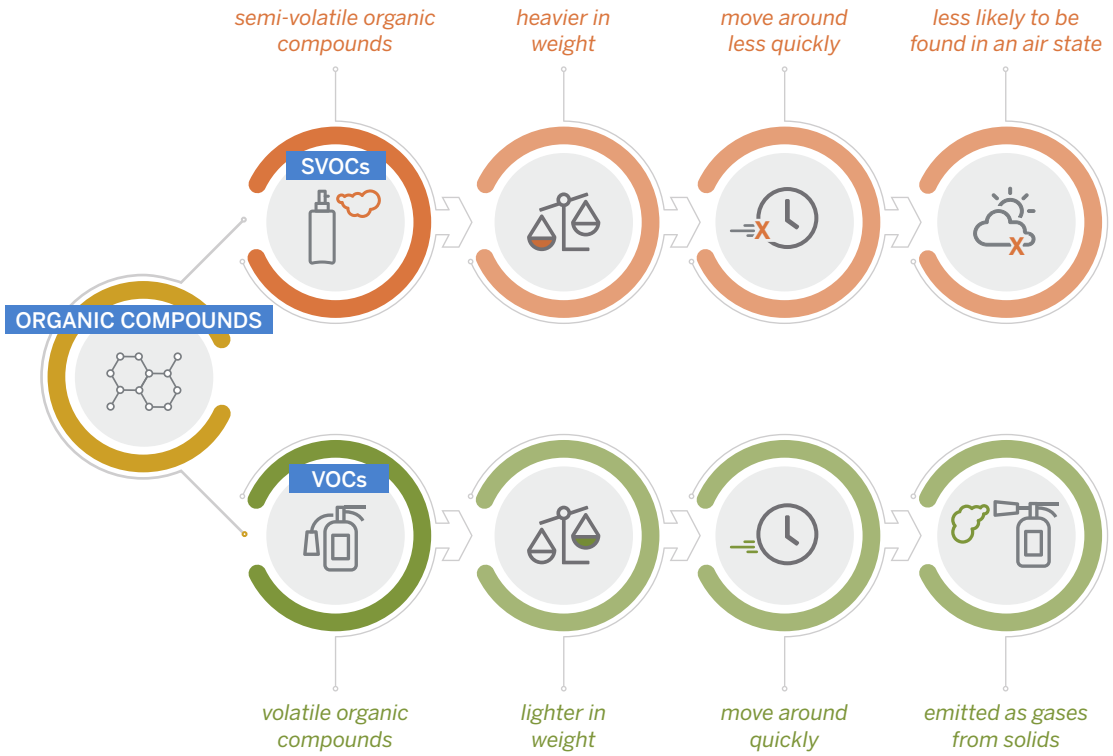
**Inorganic compounds** do not contain carbon; they include such things as metals or asbestos.




**Organic compounds** contain carbon; they include such things as gasoline, diesel, oil, or solvents.








Inorganic compounds may be a result of historical uses of the property or may be naturally occurring due to the geology of the site. Organic compounds are typically fabricated, and therefore are not considered naturally occurring compounds for most sites. Organic compounds are commonly divided into volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCs). VOCs are emitted as gases from certain solids or liquids, are typically lighter in weight, and move through the soil more quickly than SVOCs. SVOCs tend to be heavier and are less volatile, meaning they do not move around in the subsurface as quickly and are less likely to be found in a volatile (or air) state.

Methods of cleanup at a site are typically based on the type of contamination. Volatile contamination can often be cleaned up using chemical or biological techniques, or by transferring the contaminant from the subsurface into the air phase and treating the air. Metals are usually cleaned up by either excavating, capping, flushing, stabilizing, or occasionally, implementing biological techniques. Asbestos must be removed and disposed of in an approved landfill.

## Volatile Cleanup Methods

- CHEMICAL TECHNIQUES
- BIOLOGICAL TECHNIQUES
- TRANSFERRING CONTAMINANT TO AIR PHASE AND TREATING AIR

## Metals Cleanup Methods

- EXCAVATING
- CAPPING
- FLUSHING
- STABILIZING
- BIOLOGICAL TECHNIQUES


Understanding contamination types and how they can impact human health and the environment can be a challenging task involving chemistry, biology, geology, soil science, and other scientific disciplines. Collaborating with a skilled environmental professional can make this process much easier and aid in the selection of remediation methods appropriate for your site.

While not an exhaustive list, the EPA shares the following list of contaminants and hazardous materials **commonly reported** at brownfields undergoing cleanup:

- ARSENIC
- ASBESTOS
- LEAD
- PETROLEUM AND HYDROCARBONS
- POLYCYCLIC AROMATIC HYDROCARBONS (PAHS)
- POLYCHLORINATED BIPHENYLS (PCBS)
- VOLATILE ORGANIC COMPOUNDS (VOCS)

Additional contaminants **less commonly** reported as part of brownfield cleanups include:

- CADMIUM
- CHROMIUM
- DIOXINS
- MERCURY
- PESTICIDES

# BE AWARE OF POTENTIAL EMERGING CONTAMINANTS

PFAS 101 – 5 Ways to Prepare Your Community for Emerging Contaminants

READ ARTICLE

Science is an ever-evolving field. We continue to discover new contaminants or exposure pathways, or new technical research informs us that a contaminant may be more harmful than originally thought. However, it typically takes months or years to fully study the impacts and develop guidelines, standards, and even sampling and analysis techniques for such contaminants. During this "in-between" time, we may face issues that can negatively impact human health and the environment but may not have a defined regulatory structure to address the issue of concern.

One example of this is per- and polyfluoroalkyl substances (PFAS). Found in all 50 states, PFAS are referred to as "forever chemicals" because they don't break down when released into the environment and can build up in the bodies of humans and animals. PFAS are among a group of emerging contaminants currently being investigated by state and federal agencies because they pose potential risk to public and environmental health.


Although rules, standards and guidelines, and our understanding of the impacts of these contaminants may be in development, that doesn't mean these potential contaminants can be ignored. If neglected, there is a chance regulatory agencies will require re-evaluation and potential remediation after redevelopment is complete. You should consider evaluating available historical information to determine the likelihood of such contaminants being present on your site. An environmental consultant can provide guidance in this evaluation and help determine if sampling for emerging contaminants should be completed.

Liability is another concern. Knowledge of a potential issue that is not addressed can leave a developer or lender liable – financially and legally – for future harm to human health and the environment. No one can predict all potential future concerns at a brownfield site; however, a trusted environmental consultant can provide insight into trends in the industry as well as guidance on evaluating risks and navigating recommendations for emerging contaminants.

# Navigating Agency Coordination

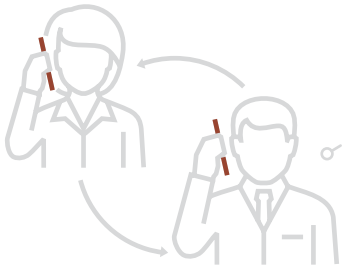
A critical component of a successful brownfield project is establishing open lines of communication with local, state, and federal regulatory agencies.

Consider regulatory agency staff part of your project team, working to protect public health and the environment, alleviate liability concerns, and avoid project delays during site cleanup.

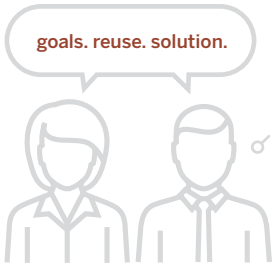
## KEY TIPS

## CASE STUDY

Find out how careful coordination with multiple stakeholders led to the success of the **Upper Harbor Terminal redevelopment project** in Minneapolis, Minnesota.



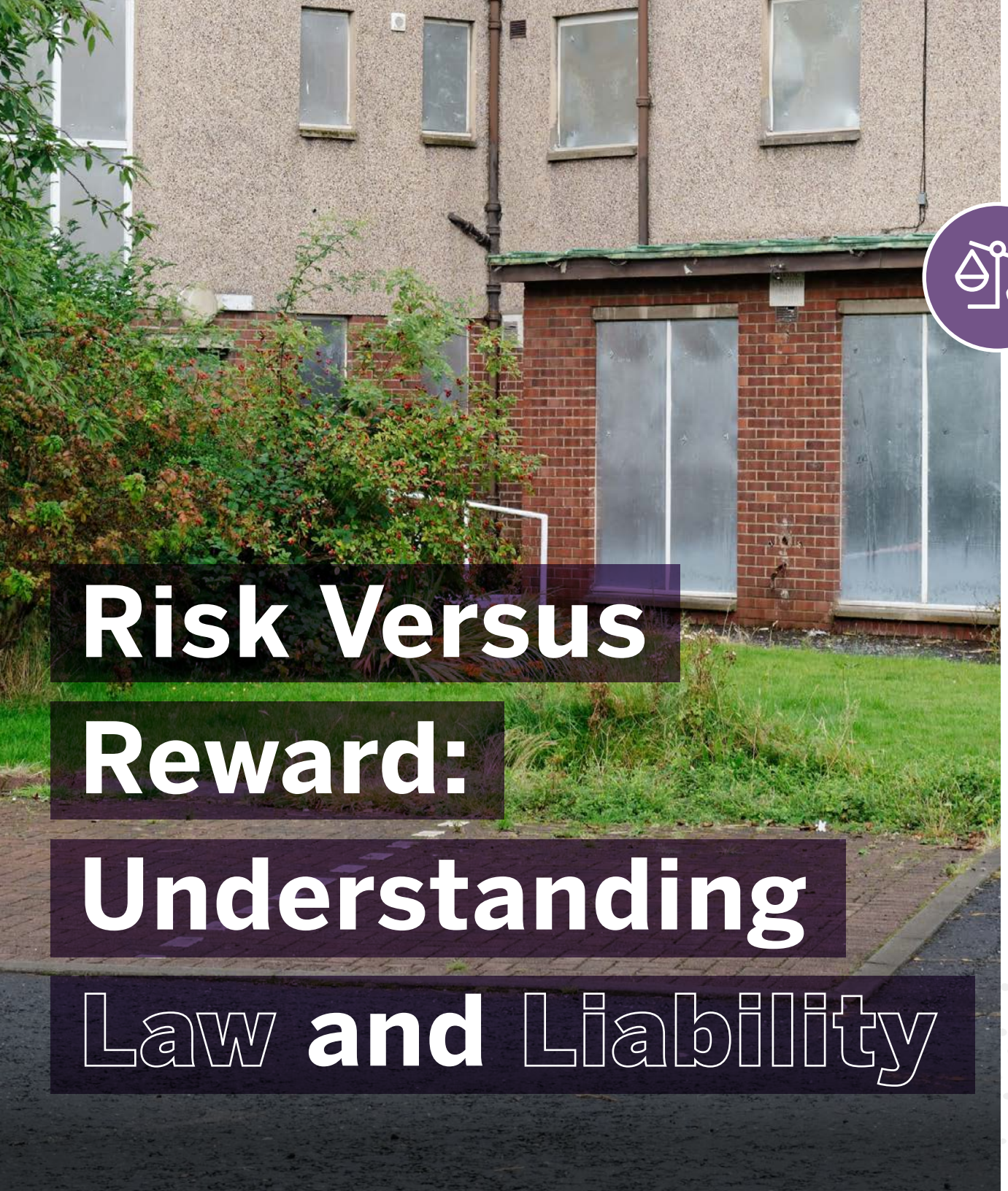
1. **Reach out early.** Early in the investigation and cleanup planning process for a site, introduce yourself and your project stakeholders to the agency – either during an in-person meeting, a conference call, or even via email.




2. **Establish a relationship.** As you move through the required regulatory processes, there are likely going to be points along the way where you will need consensus or guidance on a topic or approach from the regulator. Having an established relationship will strengthen your ability to collaboratively discuss the project's goals/reuse and determine a solution that benefits all parties.


3. **Ask for guidance.** Regulatory staff will also be able to assist with identifying potential investigation and cleanup funding programs. As outlined in the **funding section**, the EPA awards brownfield assessment and cleanup funding to communities, states, and tribes annually, and such funding may also be available in your local community or state. Other state agencies may also provide funding to support investigation and cleanup, such as economic development organizations or state Voluntary Cleanup Programs.

4. **Know your end goal.** Coordinating with the agency upfront and clearly defining the site's reuse purpose may also help determine if no further cleanup action is necessary.



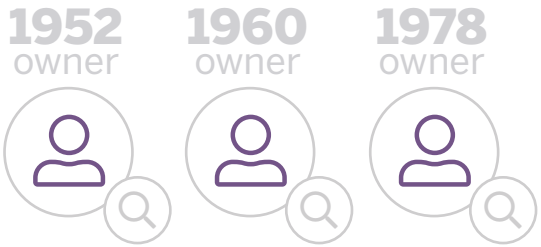
# Risk Versus Reward: Understanding Law and Liability

Laws exist at both state and federal levels to minimize potential risks to municipalities and developers and help determine if another entity might share the responsibility for cleanup.

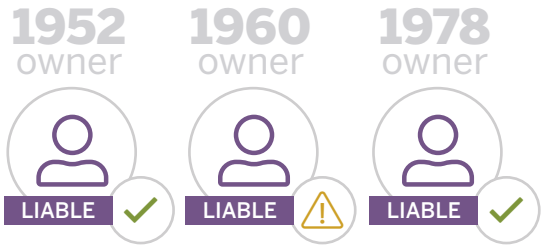
At the federal level, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, and the Brownfields Community Reinvestment Act set the stage for brownfields redevelopment. At the state level, voluntary brownfields programs encourage public- and private-sector involvement in remediation.

Superfund was enacted in 1980 to address releases of hazardous substances at sites. **Superfund liability is:**


1 **Retroactive.** Parties may be held liable for acts that happened prior to enactment of the Superfund law.




2 **Joint and several.** Any one potentially responsible party may be held liable for the entire cleanup when damages caused by multiple parties cannot be separated.




3 **Strict.** Parties who were operating within industry standards applicable at that time are still liable. Additionally, if a party did not cause or contribute to the contamination found at the site, that party can still be liable.

Due to the specter of Superfund liability, parties were reluctant to purchase or redevelop sites with real or perceived impacts from hazardous substances. This resulted in an abundance of "blighted" properties, especially in urban areas between the 1980s and early 2000s. As a result, the EPA codified the Brownfield Law in 2002 to address liability concerns under Superfund. By following specific steps prior to acquisition, called All Appropriate Inquiries (AAI), certain landowners and potential property owners who did not cause or contribute to contamination at the site are eligible for one or more liability protections. **The liability protection options include:**

1. **Innocent landowners** who did not know and had no reason to know prior to purchase that the site may be contaminated.
2. **Contiguous property owners** who own property that is contiguous to a facility and did not know and had no reason to know the property may be contaminated.
3. **Bona fide prospective purchasers** who may purchase the property with knowledge of contamination provided they meet certain criteria specified in Superfund.
4. **Local or state governments** that acquire ownership of property involuntarily through bankruptcy, tax delinquency, or abandonment.
5. **Government entities** that acquire property through eminent domain.

Any party seeking protection under Superfund or any party who receives brownfield funding is subject to the requirements of AAI. The American Society for Testing and Materials Standard for Phase I Environmental Site Assessments is approved by the EPA to meet the requirements of AAI.


While Superfund is the driver behind brownfield cleanup, other environmental regulations may apply to a site. These rules can be complex, and applicability can be based on a variety of factors such as timing of the release, type of substance discharged, or even the use of the substance prior to disposal. Sometimes a substance can be predetermined to be hazardous, regardless of the concentration in the material. Partnering with an environmental attorney can be beneficial to minimizing potential risks and liabilities.


1. **Watch the clock.** Once the contaminated media (e.g., soil, groundwater, surface water, or vapor) are disturbed or removed from the ground (except for sampling), specific timelines become a factor. Improper storage and handling of these materials can lead to costly delays and potential regulatory enforcement actions.

2. **Get support.** Contacting a qualified environmental professional early in the redevelopment process is critical to navigating complex regulations and completing a Phase I ESA.

3. **Put an agreement in place.** Depending upon the complexities encountered at the site and the parties involved with the redevelopment transaction, it may be recommended to involve an environmental attorney to prepare site-specific legal agreements. These agreements can clarify which party is responsible for what portion of contamination at the site, identify who is responsible for remediation costs, and tailor financial agreements to assist with funding investigation and cleanup.

# Leveraging Programs and Matching Dollars

Various financial and incentive programs exist that may help solve specific brownfield site challenges. Grants and loans can be critical funding sources to address cleanup and make it financially feasible to redevelop a site.

Tax credits may also be a worthwhile incentive; your cleanup costs could be fully tax-deductible. Or you can use funds from one program to leverage funds from another program – operating as matching funds.

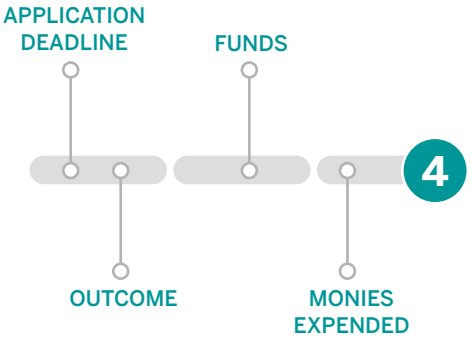
Securing funding is sometimes a complicated process – one that requires time, planning, resources, and guidance. While there are several funding sources available for brownfield projects, it's important to know which potential resources are the best fit.

# 8 steps
## TO FUNDING SUCCESS

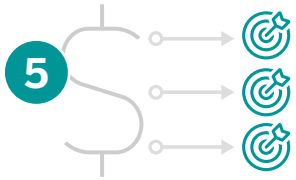

**Make sure your project is eligible.** Each program has its own set of eligibility criteria. Do your research to understand the funding program's requirements and if your project qualifies. Tap into the connections and insight your consultant provides to match the right programs with your project.


**Start early.** Dig in as soon as you have a project identified to evaluate its viability and what funding sources might be a match. Then start making those connections, preparing the application, and setting up your strategy for success.


**Strategize and prepare.** The most important part of strategizing is getting stakeholder buy-in and support. Share a clear picture of the project's goals and a timeframe to get there. Your strategy should include working with all project stakeholders – the owner, developer, municipality, contractors, and community – to make sure everyone shares a mutual understanding of the project's goals.



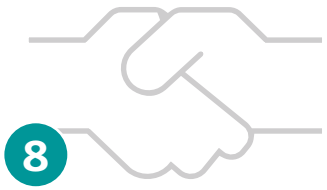

**Prioritize.** Consider the timing of the funding opportunity and your project schedule. Look not only at the deadline to apply, but also the timeframe for when you'll know the outcome, receive awarded funds, and dates monies must be expended by. Depending on the timing of your project, this may be a determining factor on which program to prioritize.



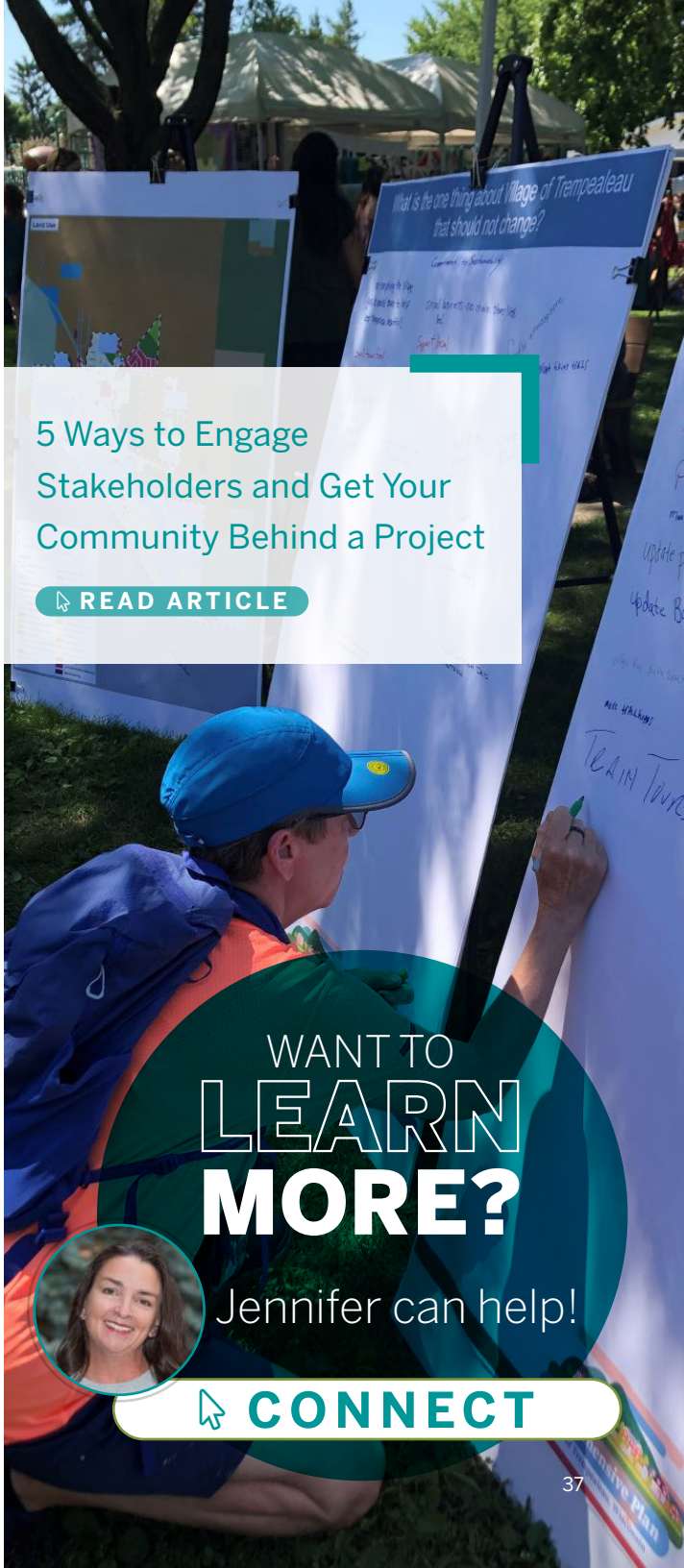

**Build a relationship with your funding agency.** Make sure your funding agency knows your project and need, as well as the value it brings. Clearly convey how your project matches the funding agency's goals. Taking the time to build relationships and getting buy-in upfront will go a long way.


**Spend the money quickly.** Put the money to work, and don't wait around for a future need. Spending the money quickly and effectively often better positions you for more funding.


**Plan for the future.** If permitted under your grant type, consider using funding for eligible planning activities. This is a great way to build momentum and engage stakeholders as part of your brownfield redevelopment efforts.




**Don't give up.** If your project isn't funded during the first round, dig in and investigate further. Find out why. Was it due to limited funding? Did your project not meet the eligibility criteria? Can modifications be made based on feedback? Consider consulting a funding specialist to help you improve your application(s) and increase your odds for the next program cycle.




Remember, the brownfield grant application process is about getting buy-in, doing the legwork, and preparing a document that convinces grantors of the value your project offers. You must be willing to devote the time and resources to position your project for selection.

> Be sure to review funding maximums, eligible costs, and requirements for each program to determine how you might layer the funding. Some costs may be eligible under only one grant program, and some grant programs may be able to offer higher funding amounts (with less match requirements) that will better suit the project needs.

**BREA GRACE**
CERTIFIED URBAN AND LAND USE PLANNER

# UNCOVERING FUNDING RESOURCES

One source of brownfield funding is from the federal government via the EPA; however, access to funds may vary from state to state. In some cases, a grant applicant for a brownfield project may apply directly to the EPA, while in other situations a local agency – such as a State Voluntary Cleanup Program – will secure and administer brownfield funds under existing agreements. Also, numerous states, counties, and local governments have their own brownfield funding programs. Let's explore each funding source further.

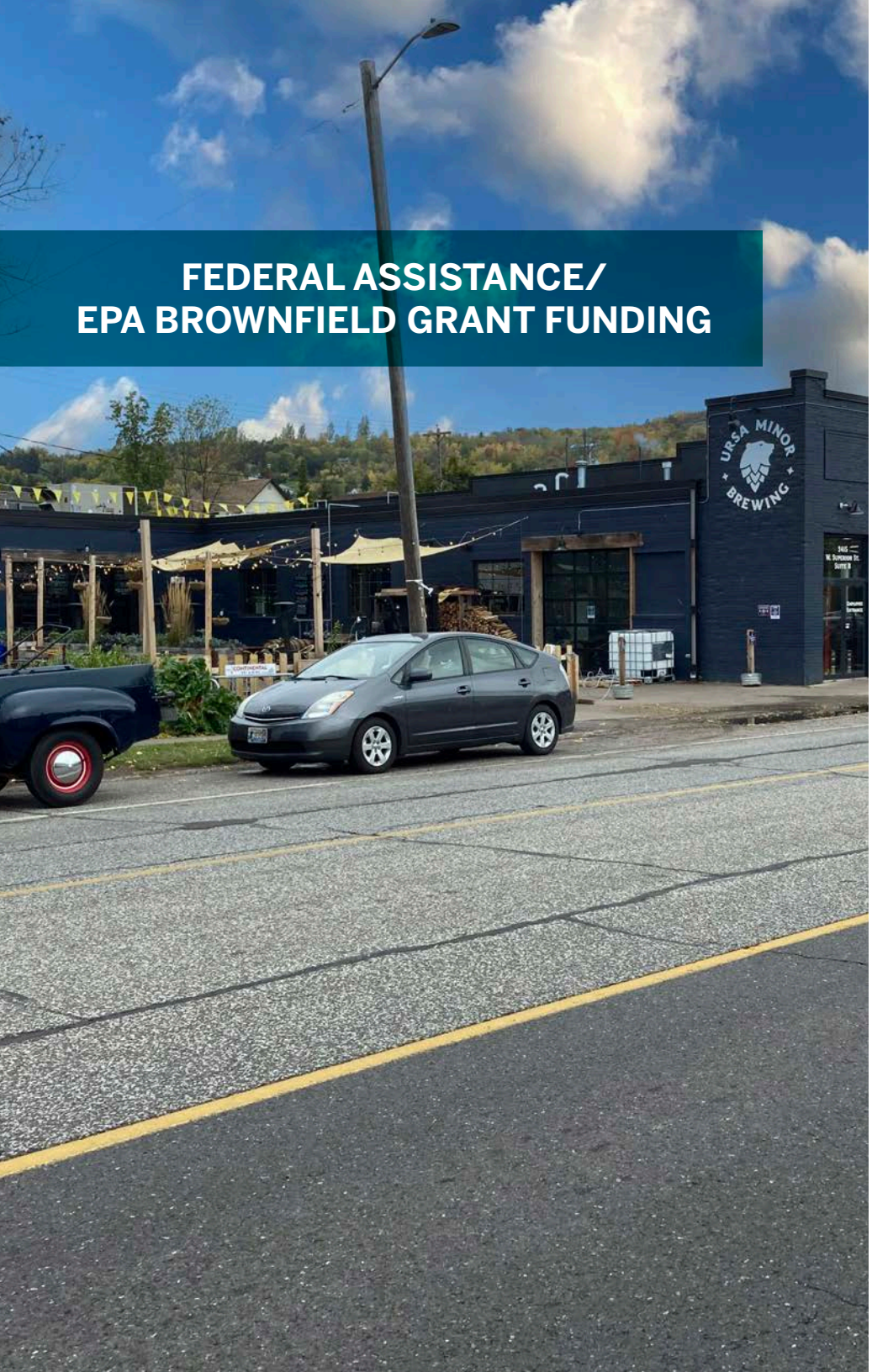
Leveraged
**$31 billion**
in cleanup and redevelopment

## EPA's BROWNFIELDS PROGRAM

Began in
**1995**

Provided
**$1.6 billion**
in brownfield grants

The EPA's Brownfields Program began in 1995 and has provided nearly $1.6 billion in brownfield grants to assess and clean up contaminated properties and return blighted properties to productive reuse. To date, brownfield investments have leveraged more than $31 billion in cleanup and redevelopment.




# FEDERAL ASSISTANCE/ EPA BROWNFIELD GRANT FUNDING

**ASSESSMENT GRANTS**
serve as the foundation of brownfield redevelopment programs by providing money for brownfield activities. These activities include, but are not limited to, project planning, property inventories, environmental site assessments, community outreach, site remediation planning, and environmental jobs training.

**REVOLVING LOAN FUND (RLF) GRANTS**
provide low interest loans to clean up brownfield sites.

**TARGETED BROWNFIELD ASSESSMENT (TBA) PROGRAM**
provides environmental assessment assistance at no cost to eligible public entities and non-profit organizations; assessments are conducted by an EPA contractor on behalf of the eligible entity. TBA services can include Phase I ESAs, site investigation activities, cleanup options and associated cost estimates for cleanup, and community outreach.

**CLEANUP GRANTS**
provide funding to carry out cleanup activities at brownfield sites owned by the applicant.

**MULTIPURPOSE (MP) GRANTS**
provide funding to conduct a range of eligible assessment and cleanup activities at one or more brownfield sites in a target area.

**JOB TRAINING (JT) GRANTS**
provide environmental job training for residents impacted by brownfield sites in their communities.

**STATE AND TRIBAL RESPONSE PROGRAM GRANTS**
provide non-competitive funding to establish or enhance state and tribal brownfields response programs.

# STATE ASSISTANCE

Each state offers different funding programs that can assist with property investigation, cleanup, and/or redevelopment. Some include EPA funds distributed to each state, while others are funded directly by the state and are unique to that geographic area. Additionally, regional, county, and local government agencies may have funding programs as well. Connect with your state agency at the start of your project to discuss how it might fit their program.


> Brownfield program representatives are often deeply knowledgeable about not only their program, but other options as well. Let them help you navigate which program might work best.

COMMUNITY DEVELOPMENT SPECIALIST

# TAX INCREMENT FINANCING (TIF) PROGRAMS


Through the Brownfield Redevelopment Financing Act, a brownfield TIF is a funding and economic development tool that allows applicable taxing jurisdictions to receive revenue from property taxes by capturing the incremental increase in property values (and the resulting tax revenue) from a redevelopment project.

TIF is unique in that it relies on the investment and performance of the individual project without pulling tax revenues from other properties within the community or increasing taxes for the entire community. It can also be layered to incorporate other financial incentives, such as grants, loans and other types of tax credits.

FUNDSTART™

CONCLUSION

# Brownfield developments can uncover immense potential and provide longstanding benefits to the environment, economy, and community.

Do you have a potential brownfield site in mind but are unsure where to begin? Our team of planners, funding experts, scientists, and engineers are adept at understanding complex redevelopment needs from concept to completion. We welcome the opportunity to have a conversation about your needs.

LET'S CONNECT


***Sources:***

*Brownfields Program Environmental and Economic Benefits | US EPA (epa.gov)*

*Environmental Benefits of Brownfields Redevelopment – A Nationwide Assessment (epa.gov)*

*Top 5 Economic Benefits of Brownfield Redevelopment (stegoindustries.com)*

*Viewpoint: How to move brownfields from eyesores to opportunities - American City and County (americancityandcounty.com)*

*Funding for Brownfields - Kentucky Energy and Environment Cabinet (eec.ky.gov)*

*What We Do - Colorado Brownfields Partnership (cobrownfieldspartnership.org)*

*An introduction to cleaning up contamination | Wisconsin DNR (dnr.wisconsin.gov)*

*Financial Resources (mnbrownfields.org)*

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