The University of Iowa
IOWA INITIATIVE
FOR SUSTAINABLE COMMUNITIES

# IA Reuse Readiness:
## A Toolkit for Identifying and Assessing Brownfield Sites


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***In partnership with***
**East Central Intergovernmental Association**



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## *A TOOLKIT FOR IDENTIFYING AND ASSESSING BROWNFIELD SITES*

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## Executive Summary

The East Central Intergovernmental Association (ECIA) is a council of governments that serves a five county area in eastern Iowa. In 2015, ECIA established the East Central Brownfields Coalition (ECBC) to help address the problem of brownfield properties in its service area. Such sites are defined by the U.S. Environmental Protection Agency (EPA) as "property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."

The objectives of ECBC include obtaining federal funding from the EPA to provide information about brownfield sites to constituent governments to identify, assess, and return brownfield properties to productive use. In May of 2016, ECBC was awarded a $600,000 environmental site assessment grant to meet these objectives. An important first step in the process is to create a detailed inventory of potential brownfield sites within the ECIA region in order to identify sites that qualify for these funds.

This report details the IA Reuse Readiness Toolkit, which was developed to support ECBC activities. The toolkit contains three components, the first of which is an Excel repository that serves as a tool to inventory brownfields and will be utilized both by ECIA and the communities it serves. The Excel repository also contains a prioritization mechanism, which scores sites based on their redevelopment potential.

The second component is comprised of outreach materials developed in support of the inventory. These materials provide a baseline of information about brownfields and can be used by municipal officials and ECIA to inform stakeholders about brownfield assessment and redevelopment processes.

The third and final component of the toolkit is an investigation into land banking as a possible means to facilitate brownfield revitalization. It includes an examination of enabling legislation and analysis of four potential operating structures permissible under current Iowa law.

The three components of the toolkit complement each other to help ECIA address brownfield sites within its service area. Developed with the cooperation and input from city administrators and residents in the communities of Preston and Maquoketa in Jackson County and Clinton in Clinton County, the toolkit is designed to be deployed throughout the ECIA service area.

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# Section 1: Introduction

## 1.1 Project Overview

The Eastern Central Intergovernmental Agency (ECIA) is a Council of Governments (COG) that serves a five-county area in Iowa characterized by farming communities and small industrial hubs. These towns can range in size from fewer than 100 residents to nearly 58,000, and the opportunities and challenges posed by brownfields in this area are likewise varied. However, regardless of community size, brownfield revitalization can yield important benefits for the economic, social, and physical health of a community.

Brownfields are defined by the U.S. Environmental Protection Agency (EPA) as "property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."[1] Even so, brownfield assessment and redevelopment is often hindered by confusion as to what is and is not a brownfield (a small, abandoned gas station may be, while an active manufacturing site often is not). The stigma associated with contaminated sites further compounds the problem, as landowners and community leaders may be reluctant to affix a label a property that carries negative connotations.

The American Planning Association identifies six steps for brownfield revitalization: develop a community vision, identify brownfield sites, assess level of contamination, determine reuse options, evaluate cleanup options, and implement a redevelopment plan.[2] The project detailed in this report focuses on assisting planners at ECIA with the second step – identifying brownfields – with an aim to facilitate testing for contamination and, ultimately, redevelopment of these sites.

The Identify and Assess Reuse Readiness Toolkit (IA Reuse Readiness Toolkit) developed as a result of this project contains three key components. The first is an Excel repository that serves as a tool to inventory brownfield sites and will be utilized both by ECIA and the communities it serves. A scoring system has been built into the inventory that will enable ECIA to prioritize sites for environmental testing based on redevelopment potential. The second component is comprised of outreach materials developed in support of the inventory. These materials provide a baseline of information about brownfields – including key characteristics of brownfield sites, types of site assessment, the redevelopment process, and potential sources of funding for cleanup activities – for town administrators and community volunteers engaged in the inventory process as well as brownfield property owners they may approach. Finally, the third component of the toolkit is an investigation into land banking, including analysis of four potential operating structures for such an entity, as a possible means for ECIA to facilitate next steps in revitalizing brownfields.

Initial efforts in the development of this toolkit concentrated on three focus communities – Preston, Maquoketa, and Clinton – within Jackson and Clinton Counties. The overarching goal of the project, though, has been to create a toolkit that can be deployed throughout the ECIA service area to identify, assess, and address brownfield sites. Recognizing that many of the communities served by ECIA have limited staff and technical resources, the toolkit is designed to minimize ambiguities in the brownfields assessment process and to engage town administrators in a process that is efficient and comprehensible.

## 1.2 Project partner: ECIA

Formed in 1974, the East Central Intergovernmental Association (ECIA), serves as a COG for municipalities within five counties in eastern Iowa: Cedar, Clinton, Delaware, Dubuque, and Jackson, as shown in Figure 1.1. In this capacity, ECIA focuses on providing services and resources to communities in this region that may be unable to administer themselves such as management of wastewater treatment systems and housing assistance

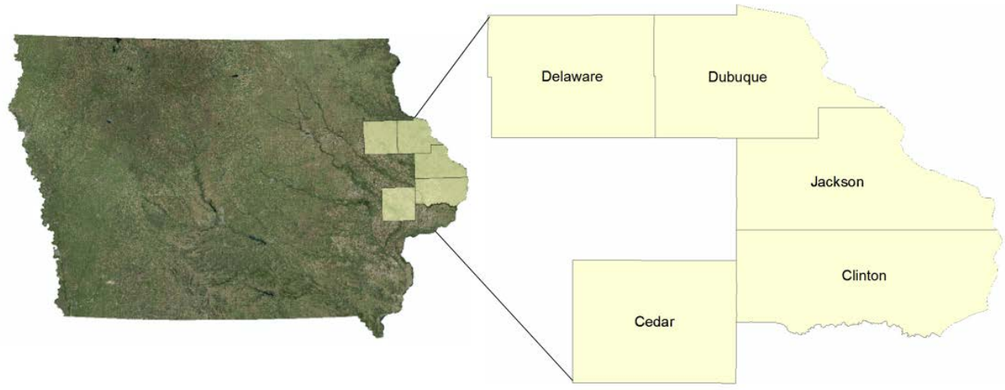


**Figure 1.1: The five county area served by ECIA. Image source: the authors.**

programs. In addition, ECIA works with other agencies to improve the quality of life throughout its service area.

Of the communities it serves, nine have a population size (2,500-50,000) to qualify as urban clusters: Tipton, Comanche, Clinton, DeWitt, Dyersville, Manchester, Asbury, and Maquoketa. The remainder of the communities are classified as rural by the U.S. Census Bureau. The majority of the communities ECIA serves (93%) have a population of fewer than 5,000 residents.

ECIA has participated in economic and community development projects for redevelopment since 1970s, but none of these development projects are directly related to brownfields. After receiving many questions in recent years about available resources to deal with derelict buildings in communities, touring disused properties, and learning difficulties to bring the properties to productive use, ECIA decided to seek brownfield funding resources as a means to address these properties. This lead to the establishment of the East Central Brownfields Coalition (ECBC) in 2015, which has a focus on developing a brownfield program for all five counties.

Currently, the coalition has three members: ECIA, Clinton County, and Jackson County, though all five counties in the ECIA service area can receive assistance from ECBC. The coalition is led by a steering committee under the direction of ECIA program manager Nicole Turpin.[3] The objectives of ECBC include obtaining federal funding from the EPA for brownfields assessments, informing local governments about brownfields, and developing brownfields tools and resources to address the needs of communities. In addition, the coalition is pursuing funding sources for future cleanup activities.[4]

## 1.3 Project Focus Area

In May 2016, ECBC received a $600,000 EPA community-wide assessment grant that targets brownfield sites in Clinton and Jackson Counties. Available through 2019, these funds can be used to inventory sites, characterize past uses, assess existing contamination, provide brownfield information to the public, and engage participating communities in the planning process for site redevelopment.[5] Of these funds, $350,000 can be spent addressing hazardous substances and $250,000 can be spent addressing petroleum contamination, though there is no cap as to what portion of these funds can be spent in any given community.[6]

Brownfield sites are not unique to urban areas, despite often being perceived as such in the popular imagination. In fact, in urban areas experiencing rapid growth, market conditions may be sufficient for developers to be willing to undertake the environmental testing and cleanup of brownfield sites as part of their redevelopment efforts. In rural areas experiencing population and/or economic decline, however, the presence of brownfield sites can contribute to the overall perception of disinvestment in the community. Government intervention, technical expertise and special funding may be needed to address such sites and break the cycle of disuse.

The two counties that are the focus of the grant received by ECIA – and, consequently, the focus of this project – exemplify the challenges rural areas face in addressing brownfields. Clinton County, located on the Mississippi River, is the easternmost county in Iowa with an area of 695 square miles. It is comprised mainly of farmland and small communities, though the county seat (also named Clinton) also serves as an industrial and railroad hub for the surrounding area.[7] As of 2015, Clinton County had a population of 47,768. However, Clinton County has experienced population decline and employment losses for decades. The median household income for the county, $49,849, is below the average for Iowa,[8] and the median value of owner-occupied housing units for the county is $16,200 lower than the state average of $126,300. Clinton County's poverty rate of 13% is slightly higher than the state average of 12%.[9]


**Figure 1.2: Clinton, IA, on the Mississippi River, is the largest of the three focus communities involved with this project. Image source: the authors.**

Jackson County borders Clinton County to the north. It has a population of 19,444 and a total area 636 square miles. Forty-one percent of the county's population lives in unincorporated areas. Lumber and manufacturing make up the major industries in the county.[10] Like Clinton County, the median household income for Jackson County, $47,004, is below the state average for Iowa.[11] The median value of owner-occupied housing units for

the county is $15,800 lower than the state average. Jackson County's poverty rate of 13% is also modestly higher than the state average.

Manufacturing is among the top three employment sectors for both counties (the other two being the health care and social assistance sector and the retail trade sector).[12] Although the industrial properties in both counties may seem like the most obvious candidate brownfield sites, derelict commercial buildings containing asbestos and former businesses dealing with chemical solvents (such as drycleaners) and petroleum products (such as gas stations and automotive repair shops) are likely to make up the majority of brownfield properties in these communities. In addition, records kept by the Iowa Department of Natural Resources (IDNR) indicate there are 122 known leaking underground storage tank (LUST) sites and 35 known contaminated sites in Clinton County, and 49 LUST sites and 5 known contaminated sites in Jackson County. These sites represent some, but not all, potential brownfield sites in the counties.

| | Land Area | Population | Median Household Income | Poverty Rate |
|---|---|---|---|---|
| Preston | 1 sq. mi. | 1,079 | $44,063 | 9.5 |
| Maquoketa | 4.4 sq. mi. | 5,989 | $36,431 | 17.4 |
| Clinton | 38 sq. mi. | 26,604 | $41,848 | 17.3 |
| State of Iowa | 55,857 sq. mi. | Mean community population: 659<br>Median community population: 3,306 | $53,183 | 12.2 |

**Table 1.1: Brief profile of focus communities. Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates.**

The IA Reuse Readiness Toolkit was developed with assistance and insight from administrators and community members in three communities: Preston, Maquoketa, and Clinton, the first two of which are located in Jackson County and the third is the county seat of Clinton County. Basic population and income data for all three communities can be seen in Table 1.1, above. The administrative structure for these communities is varied according to their size, with a clerk and deputy clerk handling most of the administrative tasks in Preston at one end of the spectrum and, at the other end, administrative tasks divided between multiple departments under the direction of a city manager in Clinton. Because these communities are representative of the range of population size and administrative capacity for the larger two-county area, focusing on these towns allowed the IA Reuse Readiness Toolkit to be developed to meet the needs of the larger East Central Brownfields Coalition service area.

## 1.4 Project scope

At the time of this writing, an unknown number of brownfield sites exist in the ECIA service region. The reasons for this are many, though misperceptions as to what is and is not a brownfield are a major contributor. In addition to the known contaminated sites and leaking underground storage tanks (a portion of which may have previously been remediated), there are an unknown number of buildings containing asbestos and an unknown number of sites that may have been contaminated but not registered with the IDNR. This lack of knowledge as to the location and extent of brownfield sites is the primary hurdle to utilizing the EPA site assessment grant won by ECIA to spur brownfield redevelopment. Because the grant funds have been earmarked according to types of contamination – $350,000 for hazardous substances and $250,000 for petroleum – collecting information about past uses of potential sites is key to applying funds correctly.

Developing the scope of this project was a collaborative effort between Jenna Soyer, who initiated the brownfields project at ECIA, a team of graduate students in the Urban & Regional Planning program at the University of Iowa, and their faculty advisors. After Soyer left ECIA in December, this collaboration continued with Nicole Turpin, Soyer's successor at ECIA. A multitude of outside experts also have provided vital insight and guidance, including Mel Pins, program coordinator of the Iowa Brownfield Redevelopment Program at IDNR, and Margaret Renas, environmental engineer with Delta Institute and coordinator for the U.S. EPA Technical Assistance for Brownfields (TAB) program in Iowa, Illinois, and Wisconsin.

The final product of this project is comprised of three components within the IA Reuse Readiness Toolkit:

1. An inventory and prioritization mechanism: ECIA will receive an Excel-based inventory tool that will enable communities to enter information about candidate brownfield sites. The prioritization mechanism built into this software is a point-based system based on site attributes. Some fields are given flat point values that incentivize providing the information necessary in order to meet EPA requirements for grant funding, while others are given differentiated points that allow sites to be ranked according to redevelopment potential. The point values for this prioritization mechanism are detailed

within the Excel document so as to be transparent to users and provide clear guidance for communities serious about the redevelopment of brownfield sites.

The inventory software, prioritization mechanism, and outreach material components of the IA Reuse Readiness Toolkit have been tested and refined through multiple visits to the focus communities. A preliminary inventory of brownfields sites has been compiled for these communities, and the toolkit is now ready for wider deployment throughout Clinton and Jackson Counties as well as the entire ECIA service area. To assist with this deployment, two training workshops were conducted in Maquoketa (Jackson County) and Manchester (Delaware County) on April 5 and 6, 2017, respectively, that demonstrated the basic user functions of the software. Initial reception to the toolkit has been positive.

To support the future use of the software, a technical manual documenting the code base of the Excel portion of the toolkit has been written and are included with the final product package. Should ECIA ever decide to revise, alter, or expand the inventory software, this documentation will provide both an explanation of specific code snippets and a roadmap of internal functions. From this manual a user will gain the ability to perform tasks such as altering point values of specific responses or changing where and how information is stored within the inventory.

2. Outreach material: Printable fact sheets have been developed to accompany the inventory tool. Addressing the muddled nature of brownfield sites is a critical task when bringing communities together to create a regional inventory of potential sites. The aim of this outreach material is to dispel misperceptions regarding brownfield sites and provide a baseline of information for communities participating in the inventory process. These materials address what constitutes a brownfield, the different types of site assessment covered by the EPA grant funds, additional funding opportunities, and a basic timeline for brownfield site redevelopment.

3. Land bank feasibility study: Once sites have been assessed, a public or non-profit land bank program may enable successful redevelopment of brownfield sites. Such an entity would provide a mechanism to obtain properties where contamination is confirmed, manage further assessment and cleanup, and return the properties to the market when ready for redevelopment. The land bank analysis contained within this report includes case studies that profile successful land banks, a discussion of key provisions in enabling legislation adopted by other states in support of land bank activity, and an analysis of potential land bank operating structures allowable under current Iowa Code.

The land bank analysis has drawn on best practices identified by the Center for Community Progress, a national organization that provides resource for addressing vacant, abandoned, and problem properties. The analysis also includes independent research conducted by the team to profile land banks that include brownfield sites as part of their mission, and in consultation with legal scholar Leonard Sandler at the University of Iowa and Jeffrey Schott of the Iowa Institute of Public Affairs.

# Section 2: Legal and Technical History of Brownfields

## 2.1 Overview

Hazardous. Blighted. Inoperative. Any number of descriptors exist to characterize brownfields in the United States, a pervasive type of property that nonetheless can be difficult to identify and for which no single descriptor is all-inclusive. Attempts to estimate the extent of brownfields in the U.S. attest to this: In 2004, the U.S. Government Accountability Office put the number between 450,000 and 1 million brownfield sites,[13]a variance of more than half a million sites. More recent estimates point to 5 million acres of abandoned industrial sites within urban areas.[14] Brownfields are not simply an urban issue, though, nor are they restricted to industrial sites, suggesting the total acreage of brownfields to be even higher.

Part of the difficulty in identifying brownfields arises from the definition of such sites, established by the U.S. Environmental Protection Agency (EPA) as "property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."[15] A site that is suspected of contamination and left derelict can thus be considered a brownfield until testing rules out the presence of hazardous substances. Nonetheless, even where such inventories exist, potentially contaminated sites may not appear on a state or municipal list of brownfields for reasons ranging from reluctance on the part of the owner to risk assuming liability to confusion as to what constitutes a brownfield.

Most commonly associated in the public mind with manufacturing sites, a brownfields designation actually can apply to a range of commercial and industrial properties, including former gas stations, dry cleaners, railroad facilities, processing sites, warehouses, and more.[16][17] Some brownfields may appear pristine yet contain hidden chemical contamination in soil substrates, while other sites may be suspected of contamination but prove to be safe for reuse. These ambiguities make it difficult for communities to identify the brownfield sites within their jurisdictions – ultimately preventing such properties from being addressed and returned to productive use.

Importantly, the problems posed by brownfields are not restricted to the sites themselves. Potential spillover effects include contributing to neighborhood blight, impairing public health, degrading the environment, hindering economic development, inhibiting infill development, and contributing to urban sprawl.[18] Despite these negative impacts, brownfields can represent potential assets for the community. They often occupy prime locations in or near business districts or along important transportation corridors, and offer opportunities for infill development in otherwise built-out areas.[19]

## 2.2 Key Federal Legislation

Although site contamination is not new, brownfields are a relatively recent phenomenon resulting from three key pieces of federal legislation passed in the last 40 years: the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the Small Business Liability Relief and Brownfields Revitalization Act (The Brownfields Law).

The oldest of these laws is RCRA, which was passed in 1976.[20] It established the Hazardous Waste Program, which authorized the regulation of hazardous substances through a permitting process. It also established the Underground Storage Tank (UST) program, which regulates underground tanks containing petroleum or other hazardous substances.[21] Compliance with RCRA is usually monitored by state entities, though Iowa is an exception[22] and relies upon federal oversight to ensure compliance.

Provisions within RCRA require the cleanup of a site found to be in violation of the law or when evidence arises that a site may pose an environmental or health hazard as a result of how waste materials have been handled, stored, transported, or disposed on site.[23] Either individual citizens or government entities can bring suit to initiate a site investigation.[24]

Typically, current owners of the site are liable for the cleanup cost under RCRA, though in certain cases previous owners and operators who contributed to the contamination likewise can be held liable.[25] In 1980, CERCLA further expanded liability for cleanup by covering all sites contaminated with one or more hazardous

**Under federal law, brownfields generally fall into four categories:**

1) Sites where non-naturally occurring hazardous substances may leach without a permit into the surrounding environment
2) Sites where petroleum has been disposed and poses a threat to public or environmental health
3) Leaking underground storage tanks containing hazardous substances or petroleum
4) Asbestos-containing buildings that will be renovated or demolished

(Source: Wendy E. Wagner)

substances, and allowing those who arranged for or participated in the transportation or disposal of hazardous substance at a site to be held liable as well.[26]

CERCLA also established the National Priorities List (NPL), which identifies the most severely contaminated sites and authorizes the EPA to oversee their cleanup.[27] Commonly referred to as "Superfund Sites," such contaminated areas are often confused with brownfields, which generally have lower levels of contamination and do not require direct oversight by the EPA,[28] though the EPA may provide funds in the form of grants to assist with the cleanup of brownfield sites.

Perversely, though RCRA and CERCLA were intended to help eliminate contaminated sites by establishing a regulatory framework and identifying parties responsible for remediation, the broad application of financial liability had the opposite effect. Potential purchasers of such sites have been deterred by concerns of being held responsible for cleanup regardless of fault,[29] even though the laws allow current owners to try to recover cleanup costs from previous owners. At the same time, fear of future lawsuits led many companies to "mothball" properties rather than put them on the market – the loss in land value being seen as less costly than a potential cleanup.[30] In addition, banks became reluctant to provide loans for the purchase of contaminated sites, owing to concerns as to the economic viability of such sites as well as fears of becoming the owner responsible for cleanup should the purchaser default on the loan.[31] Brownfields were the result: sites that became idle in response to contamination concerns.

The Brownfields Law, passed in 2002,[32] sought to address some of these difficulties. The law exempted some businesses from CERCLA liability if the amount of hazardous materials they generated or transported was small, and it also exempted owners of contiguous properties from liability if they did not contribute to the contamination that migrated to their sites. The law further established steps for those interested in acquiring brownfields to qualify as "Bona Fide Prospective Purchasers" and to be protected from future liability. Finally, the law authorized $250 million annually to provide for assessment and cleanup costs,[33,34] an infusion of funding that did not need to originate with the owner of the site.

## 2.3 Legal Framework for Brownfields in Iowa

Upon passing the Land Recycling and Remediation Standards Act in 1997, Iowa became the forty-fourth state in the country to enact brownfields legislation.[35] The rules for the act were adopted by the Environmental Protection Commission in 1998 and the resulting program is variously referred to as "Chapter 137" or the "LRP" (Land Recycling Program). The Iowa DNR administers the program. It is similar to many other state brownfields programs in that it is intended to encourage voluntary cleanup of contaminated sites, in exchange for the Iowa DNR's advisory, procedural, and assurance role.[36]

Iowa LRP is open to a wide range of participants and is not limited to those who would be legally responsible for the contamination. The participant also does not need to be the property owner, though the participant must present proof of access to the site. Excluded from the program are:

1. Petroleum-leaking Underground Storage Tanks (USTs)
2. Properties contained on the National Priorities List under CERCLA
3. Animal feeding operations
4. Properties subject to enforcement actions or consent orders

Perhaps the most valuable incentive offered by the LRP is the issuance of a certificate of "no further action" or NFA, which grants limited indemnification and a regulatory sign-off for the contamination addressed by LRP. The NFA guarantees that future environmental remediation on a site will not be required, releases all parties from liability from the state to perform additional assessments, remediation, or responses, and releases from liability under Iowa Code the state or any other person as it pertains to NFA site. This certificate is provided by the DNR after compliance with the flexible LRP process, which involves site assessment, risk evaluation, response action, and demonstration of compliance.

In 2004, Iowa entered into a memorandum of agreement with the EPA, in which LRP program participants would not be subject to federal liability once receiving a NFA certificate from the DNR. This has caused an increase in the usage of the LRP program. However, there are limits to the liability protection provided by the LRP program. First, the owner is only indemnified from the federal government under CERCLA, and the protection does not include state enforcement actions under CERCLA or the cost of litigation. Second, the federal government can seek injunctions when contamination creates immediate danger to the public. Lastly, there are situations where the federal government can take enforcement actions against cleanup volunteers who go through programs like the LRP, such as when the state requests that the U.S. EPA provide assistance in response actions or further contamination was discovered on the site. [37]

As a complement to the Iowa LRP program, the Iowa Economic Development Authority (IEDA) began offering incentives for brownfield and grayfield redevelopment in the form of the Redevelopment Tax Credits

Program in 2008. (Grayfields refer to economically failing or moribund real estate, which typically are not contaminated.) In 2011, the program was updated and now exists as 2011 Iowa Acts, Chapter 116. The tax credit is awarded to entities investing in brownfield or grayfield redevelopment in Iowa, and equals 12% of the total redevelopment cost for grayfields and 24% for brownfields.[38] The credit is transferrable, with a cap of $10 million, raised from $5 million in 2014. The credit is set to be expire in 2021.

The Iowa DNR also offers technical and financial assistance through its Iowa Brownfield Redevelopment Program. The program provides technical and financial resources related to the Phase I and II environmental assessment of a site.[39] The program is more focused on single sites/projects that may not need or qualify for EPA assessment funding.

## 2.4 Phase I and Phase II Site Assessments

The first step in addressing brownfields is conducting Phase I and, where necessary, Phase II environmental site assessment (ESA). This serves two purposes: It identifies contaminants that may be present and in need of remediation, and it fulfills requirements for owners to obtain "Innocent Landowner" status or "Bona Fide Prospective Purchaser" status under the federal Brownfields Law. As such, the purchaser cannot be held liable for cleanup for the same hazard in the future. This affords a measure of protection. However, should future testing reveal previously undiscovered hazards, the owner may still be liable for the cleanup of these new hazards regardless of Bona Fide status.[40]

According to the Iowa DNR's "Iowa Brownfield Reuse Guide," Phase I ESA will not make any party "directly liable" for contamination at a site and is for informational purposes. Also listed in this document are sources of funding and technical assistance for Phase I and II ESAs. ECIA member communities, especially those outside of Clinton and Jackson counties, should take advantage of the framework the Iowa DNR has in place to help municipalities attain environmental assessments at brownfield sites.

Phase I ESAs focus on investigating prior land use on the property. This includes site inspections, and interviews with community residents, including property owners, neighbors, and local officials. An overarching records review related to the site history is also performed. Laboratory testing may be conducted during this phase, but is more often reserved for the Phase II ESA.

Phase II ESAs are performed when a Phase I ESA indicates potential contamination at a site. Activities in this phase can include the following:

- Surface and subsurface soil testing
- Groundwater testing / monitoring
- Oil drum sampling (if any were present on the site)
- Testing for underground storage tanks
- Polychlorinated Biphenyls (PCB) testing

A Phase II report will outline additional testing needs and potential remediation actions. [41]

Neither Phase I nor Phase II ESAs can be conducted without the consent of the landowner, and neither federal statutes nor those for the state of Iowa compel property owners to determine whether contamination exists. However, lending institutions and potential buyers can require testing and remediation as a condition of sale, and in many cases this instigates Phase I and Phase II ESAs.[42] If a Phase I ESA reveals contamination, the landowner may be responsible for additional assessment. However, the current landowner cannot be made to pay for cleanup without definitive proof of having caused the contamination.


**Figure 2.1: Phase II testing revealed a plume of contamination traveling through the soil substrates at this former manufacturing site in Maquoketa, Iowa. Image source: the authors.**

# Section 3: Why redevelop brownfields?

## 3.1 Problem Statement

In rural areas and urban clusters, such as those served by ECIA, where the potential costs of remediation for a contaminated site often exceed the current value of the land,  little to no market incentive exist for developers to undertake the testing or redevelopment of a brownfield site.

The disinvestment that often follows, both in terms of the brownfield sites themselves and subsequent disinvestment in the areas surrounding them, pushes new development away from these sites and toward undeveloped "greenfield" areas that are free of liability concerns for lenders and business developers. In rural communities, this can contribute to the migration of commerical activity from the downtown to the town's periphery. Further compounding the problem, the newly developed greenfields can become brownfields as well once contaminated, perpetuating a cycle in which properties fall into disuse while new development contributes to sprawl, as depicted in Figure 3.1.

In addition, brownfield sites, when left derelict as a result of the stigma of real or perceived contamination, can have spillover effects impacting the economic, social, and physical health of the surrounding community. These effects are examined further in the following sections.

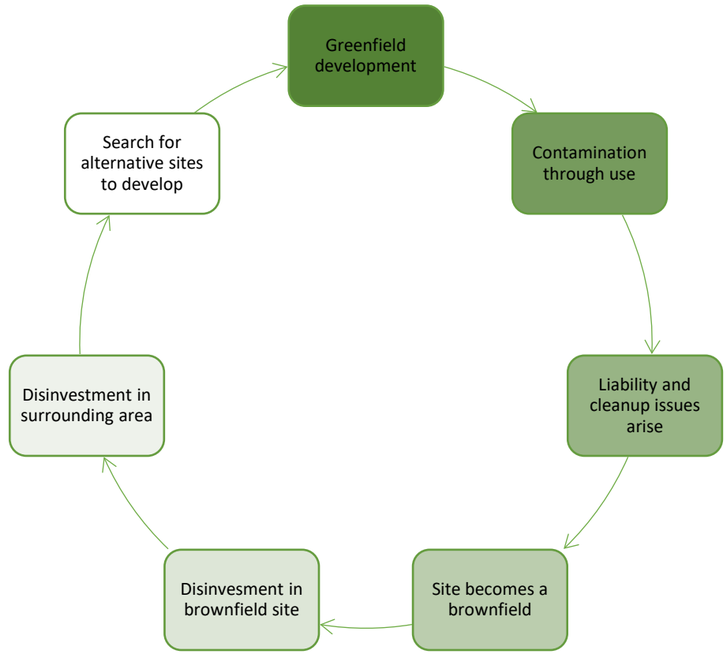


**Figure 3.1: The brownfield cycle can contribute to ongoing greenfield development, leading to sprawl. Source: Long, Gargas, Hubner, Tardiff.**

## 3.2 Health Impacts

Potential health impacts are the risk that perhaps comes most readily to mind when considering brownfields. This risk is also the most difficult to quantify. Cancer, for example, is among the most commonly feared outcomes of exposure to chemical contamination,[43] but such diseases are complex and subject to both environmental and behavioral factors. This can make it extremely difficult to draw definitive conclusions as to the degree to which a disease has been caused by a specific site.[44]

Toxic substances associated with brownfield sites include heavy metals, chlorinated hydrocarbons, and polycyclic aromatic hydrocarbons.[45] Appendix B contains a table listing a number of common chemical contaminants that may be found at brownfield sites and their known health effects. It is important to note that these contaminants are not found at every brownfield, nor is the list exhaustive. Depending on the history of the site, brownfields may have one or more of these substances, other contaminants entirely, or none at all. This is part of the reason ESAs are critical, to identify the contaminants and verify their concentration levels.

Risk is calculated in terms of both toxicity and the level and duration of exposure. Although the effects of short-term exposure to high levels of chemicals are well understood, the effects of long-term, low-level exposure – such as may be experienced by residents living near a brownfield – are not as well established.[46] Moreover, exposure may fluctuate over time[47] and, in the context of brownfields, is also subject to a number of factors: the level of contamination on site, the security of the site, whether contaminants are migrating from it, and the vulnerability of the surrounding population.

Although research tying specific health outcomes to brownfield sites is limited, some studies of large urban areas have been able to establish some connections. For example, a pair of studies examining more than one thousand brownfield sites in Baltimore found that, compared to areas of the city with fewer brownfields, those with higher proportions of such sites also had respiratory disease, cancer, and heart disease mortality rates that exceeded city, state, and national averages.[48,49]

Other studies have found density to be one of the key factors in terms of health impacts: A study of brownfields in Charlotte, North Carolina, found that proximity to a brownfield site alone did nor correlate with low birth weights, though density of brownfields in a census block group did.[50] Elsewhere, a national-scale study using census data in England found residents in areas of the country with higher concentrations of brownfields were more likely to suffer from poorer health.[51]

In Iowa, concerns about possible impacts on public health arising from contaminated sites are investigated by the Iowa Department of Health (IDH) through the Hazardous Waste Site Health Assessment Program. State Toxicologist Stuart Schmitz has been the principal investigator for many of these studies, which are conducted in response to citizen requests. Because each of these investigations examine a single site, patterns such as those observed in the studies in Baltimore, Charlotte, and England that examine multiple sites are not replicated by these investigations. Instead, IDH examines levels of chemical contaminants found on suspect sites and possible routes of exposure for surrounding residents. A list of possible contaminants can be seen in Table 3.1 Stuart reports that with rare exceptions contamination levels have been found to be within acceptable limits upon investigation. [52]

A review of reports on brownfield sites generated by the program from 2004 to the present confirms Schmitz's assessment. Of the thirty-four reports, only one detailing tests conducted on private wells located near two contaminated sites (Chemplex and PCS Nitrogen in Comanche, Iowa) includes findings of chemical contaminant levels sufficiently high to be of concern to human health. This site is located within Clinton County. However, the report makes no determination as to the source of the contaminants in question – copper, lead, nitrate, and nitrite – which may have originated elsewhere than in the nearby contaminated sites. [53]

Establishing a causal relationship between a specific brownfield site and adverse effects on public health usually involves identifying "cancer clusters," areas where a specific type of cancer seems more prevalent in the surrounding area than has been observed among the general public. In the ECIA region, Clinton, Jackson, Dubuque, and Cedar counties all have cancer incidence

| *Industry on Site* | **Potential Contaminant** |
|---|---|
| *Automotive garages/ body shops* | Waste oils, paints, cleaners, solvents, scrap metals |
| *Dry cleaners* | Petroleum products, chlorinated solvents |
| *Dye works* | Acids, metals |
| *Electric substations* | Polychlorinated biphenyls (PCBs) |
| *Electroplating operations* | Metals |
| *Farmlands* | Pesticides and heavy metals such as arsenic and copper |
| *Gasoline stations* | Petroleum products, lead, chlorinated solvents |
| *Glass factories* | Metals |
| *Hospitals* | Fomraldehyde, radionuclineds, solvents, chemotherapty, chemicals, infectious materials |
| *Laboratories* | Explosive, corrosive, flammable, radioactive materials |
| *Landfills* | Metals, organics, PCBs, various wastes |
| *Leather factories* | Volatile organics such as benzene and toluene |
| *Manufacturing plants* | Petroleum products, solvents, metals, PCBs |
| *Petroleum refining sites* | Petroleum hydrocarbons |
| *Plastics factories* | Polymers, solvents, phthalates, cadmium |
| *Print shops* | Solvents, inks, cleaners |
| *Railroads/ rail yards* | PCBs, petroleum products, lead |
| *Salvage yards* | Petroleum products, lead, degreasers, asbestos, dioxin |

**Table 3.1: Potential contaminates by site usage. Source: Center for Creative Land Recycling.**

rates higher than both the state and national average.[54] However, Schmitz reports he is unaware of any cancer clusters identified in these counties in connection with brownfields.[55]

Regardless of the difficulties in identifying a causational relationship between brownfields and adverse public health impacts, the connection in the public mind remains clear. Chemical contaminants may not be of a high enough concentration to pose a threat, or they may be breaking down through natural processes, or they may not be migrating from the site – in these cases, the perception of contamination may be more detrimental to a community than the contamination itself. It contributes to the stigma attached to brownfields, preventing their redevelopment.

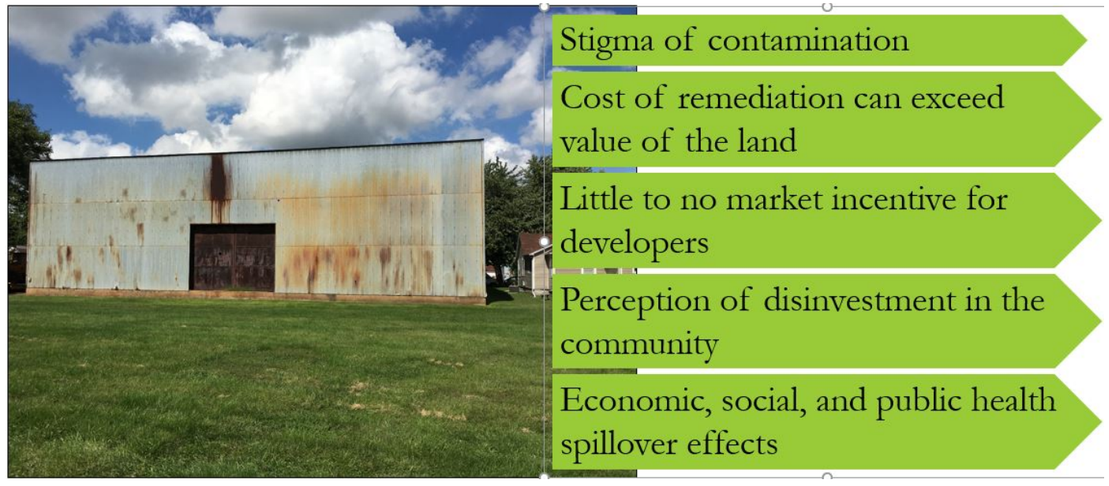


**Figure 3.2: Common issues surrounding brownfield sites. Source: the authors.**

In recent years, rather than focus exclusively on health impacts, brownfields programs at the state and federal level increasingly have connected the issue with a focus on redevelopment. This is not, as might be supposed, an attempt to downplay health hazards. Rather, it is a recognition that where health hazards exist, properties left derelict prolong the potential exposure of surrounding residents to contaminants migrating from the area. In these cases, redeveloping the site is a means to achieving remediation.[56]

## 3.3 Economic Impacts

It is not uncommon for brownfield properties to occupy areas that, if not for the site's potential contamination, would be considered prime real estate. As a result, cities with a high number of brownfields can have figurative "dead zones" in areas that otherwise bustle with commerce and shoppers. A brownfield site that occupies a critical juncture in a cityscape can cause a jarring discontinuity as a shopper goes about their business. It can have a similar effect in residential areas or along industrial corridors. These negative perceptions exacerbate the economic woes of areas with brownfield sites interspersed among actively utilized spaces.

When cities contend with brownfield sites, a vision for reuse that accompanies the redevelopment efforts is critical. Often, such plans entail a use that is tax-generating in nature. It is hard to account for an exact amount of lost tax revenue represented by brownfields, but evidence is clear as to the economic gains to surrounding areas from site remediation: when cleanup is complete, property values of residences surrounding a former brownfield can increase by 5.1% to 12.8%.[57]

Just as a brownfield site left unaddressed can have detrimental economic impacts, an intelligently repurposed brownfield site can bring positive economic impacts that extend beyond the immediate area of the brownfield itself. For example, brownfield redevelopment can act as a check on sprawl – many urban brownfield sites are already served by infrastructure, eliminating the need for new infrastructure construction costs for greenfield development and minimizing future maintenance costs.[58] Though the costs of redeveloping brownfields can exceed the development costs of previously undeveloped sites for individual builders, the unrealized costs associated with cities expanding outward may lower the cost of redeveloping a brownfield site from a community perspective.

Nonetheless, plans to redevelop brownfield sites, especially sites near community centers, must be carefully executed. Given that many brownfield redevelopment projects are infill development within urban spaces, the EPA has a keen interest in these sites becoming "linchpin" or "catalyst" sites.[59] These redevelopment projects should spur further reinvestment in a neighborhood. Such has been the case with locations like the Iowa River Landing in Coralville, a former industrial park that has become a commercial hub with ongoing redevelopment projects following the investment of brownfield cleanup funds at the site.[60] Derelict brownfield sites are often located in distressed neighborhoods already struggling to attract investment, so leveraging a high return on investment for those investors that take on the risk associated with brownfield redevelopment is important.

A 2009 study that examined property prices in Milwaukee and the Twin Cities found that in these cities, all brownfield redevelopment projects exerted a positive influence on surrounding property prices, except for Milwaukee where they negatively influenced surrounding industrial property prices. [61] Despite this study focusing on two major urban areas, it highlights certain consistencies with brownfield sites – namely that their presence depresses nearby land valuations. This can lead to further declines in tax revenue as property taxes shrink. In turn, a decline in tax revenue reduces provision in civic services, which residents of struggling neighborhoods may rely upon heavily.

This cycle of economic disinvestment reinforces itself – it is immediately noticeable in many major urban areas, especially in the portions of cities that were once home to factories and other manufacturing activities. The loss of manufacturing hit inner cities in a highly visible manner, leaving a plethora of easily recognized brownfield sites in its wake. However, these urban brownfield sites typically have the advantage of being located in and around growing population centers where development pressures may be sufficient to overcome additional costs of redeveloping such sites. The challenges faced by rural communities when reinvesting in brownfield sites are fundamentally different from their urban counterparts.

Whereas urban areas continue to grow, rural areas are generally experiencing population stagnation or loss. This demographic trend makes finding investors willing to risk their assets in rural brownfield redevelopment projects more difficult due to reduced demand for buildable land. Questions regarding liability leave many investors wary of undertaking a brownfield revitalization project, especially when greenfield development is to be cheaper and less risky. Thus, an environmental site assessment that alleviates concerns is critical to overcoming the hurdle to redevelopment by providing accurate information about a brownfield site.

A location within our focus communities that reflects many of these concerns is a former grain and feed mill situated diagonally across from City Hall in Maquoketa, shown in red and yellow in Figure 3.3, respectively. The main multi-story building on the property has fallen into disrepair, while a single-story shed haphazardly nestled along the side and back of the crumbling building provides utility to the current owners. On the opposite side of this brownfield site from City Hall there exists a small greenspace with bleachers and a stage for public events, and just beyond the park is Maquoketa's central business district (CBD), shown in green in Figure 3.3. Besides being an eyesore just across the street for City Hall, this property is an example of the aforementioned "dead zone" in downtown. Maquoketa city officials report there has been interest in turning the building into either a bed and breakfast or an event center, but investors have expressed concern about possible contamination.

Given the former feed mill's proximity to Maquoketa's CBD, a use that draws more people to downtown Maquoketa would be more beneficial than the current under-utilization as it would restore the most prominent building on the parcel to active use.

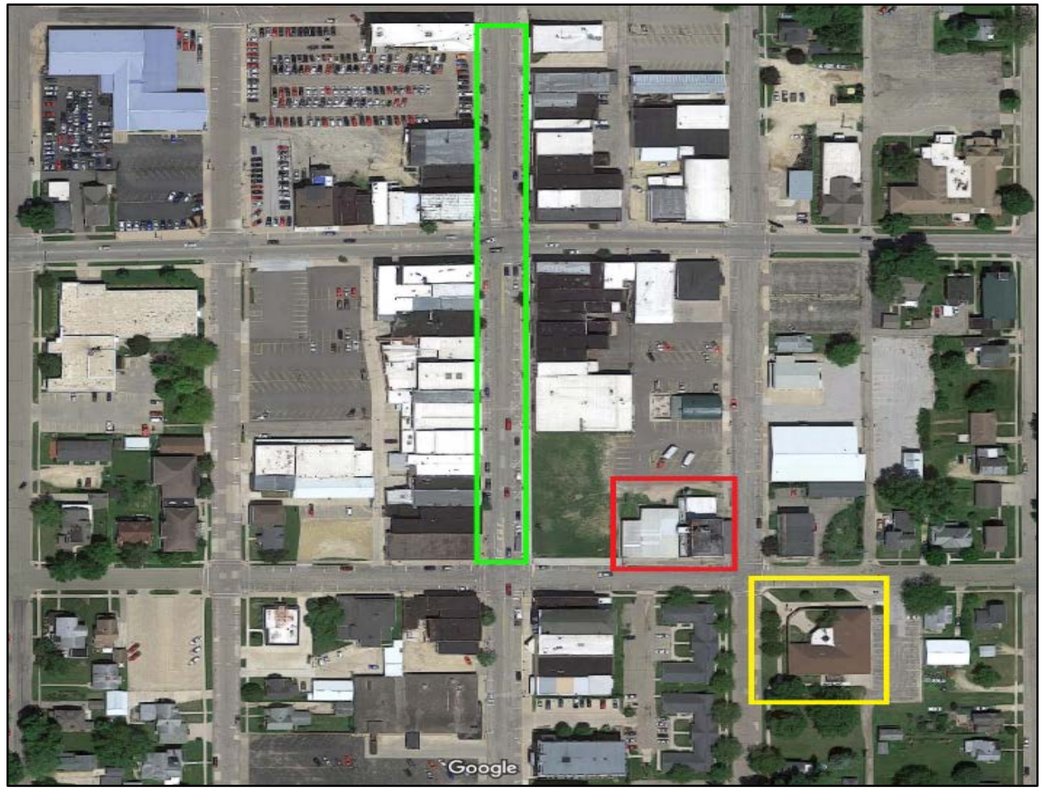


**Figure 3.3: A map of downtown Maquoketa – The yellow box indicates City Hall, the red box is the grain & feed silo, and the green box is Maquoketa's central business district. Image source: the authors**

### 3.3.1 – Developer Interviews

Related to the economic impacts of brownfields, there is also concern for a lack of real estate and development market surrounding brownfields. Since such markets are geographically variable, a pair of structured interviews with a realtor and developer active in the ECIA service area were undertaken as part of this project. These interviews attempted to ascertain general knowledge about brownfields, past experiences with redeveloping sites where a concern for contamination was present, use of financing mechanisms, liability concerns, and current market trends surrounding the real estate market in the ECIA region.

The responses were largely anecdotal, and highlights from the conversations are found in Figure 3.5. Both the realtor and developer interviewed stated that they had worked with sites they considered brownfields, and Phase I ESAs were common, but were unaware of how many brownfield sites could exist in the counties they served. Of the real estate market in the ECIA region, the interviewees stated that the region was fairly economically depressed, but there are opportunities surrounding local businesses, and chain stores expanding into mid-sized communities such as Clinton and Maquoketa. Both interviewees stated that the biggest hurdles in redevelopment of brownfield sites are the demolition and remediation costs, a preference toward greenfield redevelopment due to those costs, and issues of uncertain liability.

Notably, when interviewed about the use of the Iowa Economic Development Authority's Brownfield and Grayfield Redevelopment Tax Credit Program, the developer stated he largely relied on traditional private sector financing for developments and was unaware of the available tax credits. He requested more information from the project team, with the possibility of utilizing those credits for future redevelopment. The realtor, meanwhile, said that he was aware of the tax credits, but many redevelopment deals in his experience that could have utilized the credits had not come to fruition.

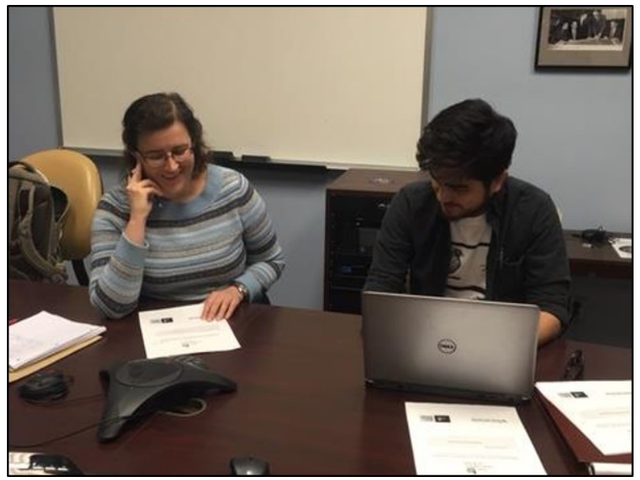

**Figure 3.4: Team members Sarah Gardner and Jay Fieser conducting the structured interviews via phone call. Image source: the authors.**

**Brownfields Activity**

- Both have worked with brownfield sites large and small, but unaware of the extent of brownfields in either county
- One business does Phase I's on nearly every property it markets

**Biggest Hurdles**

- Demolition and remediation costs
- Preference towards greenfield development
- Uncertainty of liability

**Market Demand**

- See the area as depressed, but with opportunities
- Importance of small businesses
- Trend of bigger commercial chains moving into mid-sized communities

**Figure 3.5: Highlights from the structured interviews with a developer and realtor active in the ECIA service area. Source: the authors.**

## 3.4 Social Equity Impacts

Another negative spillover effect associated with brownfields are the significant racial and socioeconomic disparities that can be associated with contaminated sites.[62] This initially can arise from zoning and land use practices that result in polluting industries being located in minority and low-income communities.

Since brownfield sites are largely about the decision to abandon existing facilities, many socioeconomic woes left by brownfields may also be attributed to deindustrialization and the loss of manufacturing firms and the income provided to the area.[63] Alternately, depressed property values surrounding brownfields may result in low-income populations moving into such areas.

An equity issue also arises in the form of potentially lower cleanup standards and redevelopment priority for brownfields sites in economically disadvantaged areas.[64] State cleanup standards are typically more lenient than national cleanup standards, which lowers developer costs, but may not adequately address public health concerns. Additionally, brownfield redevelopment priorities may also be hindered in low-income areas, where an absence of cooperation and inclusive community planning may also be lacking.[65] Literature on this facet of social equity concerns in brownfield development is somewhat lacking. However, if there are environmental disparities along socioeconomic lines, then the impact of differing standards and community prioritization of cleanup grants should be taken into consideration. In all cases, the health and wealth of low-income and minority populations can be adversely impacted by the close proximity of brownfields.

Recognizing these issues, the Small Business Liability Relief and Brownfields Revitalization Act explicitly addresses issues of environmental justice and brownfield sites by stating that ranking criteria in EPA grant applications be based partly on "the extent to which a grant would address or facilitate the identification and reduction of threats to the health or welfare of children, pregnant women, minority or low-income communities, or other sensitive populations".[66] Recipients must explain how minority, low-income, and other sensitive populations impacted by brownfield sites will participate in and benefit from brownfield redevelopment. This helps guard against situations in which more lax cleanup standards might be applied in minority or low-income communities, a manifestation of environmental injustice.[67]

Because of these reporting requirements, many EPA cleanup grants are awarded to communities with higher poverty rates, minority populations, vacancies, and lower per capita incomes than the national average, as seen in Table 3.2. For example, the average poverty rate for census block groups with EPA-funded brownfields properties is 20%, which is about 8 percentage points higher than the national average. The average minority rate for brownfield properties receiving EPA grants is 38%, which is 7 percentage points higher than the national average.[68]

Such specific social equity issues are difficult to determine within the ECIA region. This is largely due to the difficulty of significant spatial analysis on the block group level, since block groups in even the largest communities within ECIA are large and differences between them are minimal. Though potential brownfield sites in the form of LUSTs and registered contaminated sites can be geocoded, overlaying them with census data is largely unrevealing. Such an analysis would require more spatially differentiated census data. Regardless of the difficulty of analysis, the impact that brownfields can have on vulnerable populations should be considered as a justification for the assessment and redevelopment of brownfield sites.

Demographic Analysis of EPA Brownfields Communities

| | Census Block Groups EPA-funded Brownfields Properties (2000) | Census Block Groups Nationwide (2000) |
|---|---|---|
| **Attribute** | **Average** | **Average** |
| Poverty Rate Percentage | 20.1% | 12.4% |
| Minority Population Percentage | 37.9% | 30.9% |
| Vacant Resdiential Unit Percentage | 11.5% | 9.0% |
| Per Capita Income | $16,693 | $21,587 |

**Table 3.2: EPA brownfields funding targets block groups with high poverty rate, minority population, higher vacancy rates, and lower per capita income. Source: U.S. EPA.**

## Social Impacts

Another potential spillover effect associated with brownfield sites is that such properties can result in an increase in crime in the surrounding communities. Though much of the literature surrounding property decline and crime is focused on vacant properties, many brownfield sites can be included in that designation and experience similar trends. The real or perceived contamination can also lead to property value decline within the neighborhood, which in turn may lead to decreased neighborhood stability.[69] When such properties are neglected, vacant and brownfield properties become the burden of city governments, who must use their resources to prevent increased crime, fire hazards, or illegal dumping.

Among criminologists and sociologists, the "Broken Windows Theory" maintains that areas that are known for vandalism and general disorder create signaling effects that result in additional crime within the area. This is commonly accepted as reasoning for why derelict properties often lead to more crime.[70] Proponents of this theory argue that "fixing the windows" is more effective than increasing responses to incidents. In 2016, a team of researchers investigated the impact of the federal Neighborhood Stabilization Program's rehabilitation and demolition funding to tackle the negative spillovers associated with the properties.[71] They found that the demolition or rehabilitation of buildings through the neighborhood revitalization program did reduce crime in the areas surrounding vacant properties in Cleveland, Chicago, and Denver.



**Figure 3.6: A site now remediated in Maquoketa was subject to consistent break-ins. Image source: City of Maquoketa.**

When left vacant, mismanaged, or neglected, brownfield properties also can be common sites for fires and cases of arson. A 2009 National Fire Protection Agency report estimated an average of 31,000 structure fires in vacant buildings from 2003 to 2006. Of that sample, 43% of vacant structure fires were intentional, and 57% were intentional in unsecured properties.[72] Unintentional fires are commonly due to poor maintenance, faulty wiring, and debris. Squatters may burn candles for light and heat, especially in the winter. Unsecured vacant properties can also be the target for arson. Similar to the resource strain on police, fire departments and their staffs can be fiscally and physically strained by such incidents.

Generally, criminal activity surrounding brownfields takes the form of property crimes such as vandalism, breaking and entering, and in rare instances, arson. One possible use for the inventory developed through this project, once populated with brownfield sites in the ECIA service region, would be to analyze community crime data to look for patterns of higher criminal activity in the vicinity of the brownfield sites.

Until the location of more sites is known, such analysis is not possible, though anecdotal evidence exists that suggests that brownfields in this region as elsewhere are similarly subject to increased criminal activity: Captain Tom Bohle, of the Clinton County Police Department reports the former Schick Army Hospital campus, a large potential brownfields site, is also a site of ongoing criminal activity. These reports included juveniles partying in unoccupied buildings. There are also many reports of squatters. Perhaps more concerning are the occasional reports including problems with gang related activity and shootings. As compared to the rest of the city, the area has generated a larger amount of police dispatches and incident reporting, though it has been decreasing over the years.[73] This decrease is most likely due to the decline in tenants living around the area.

**Figure 3.7: Empty buildings at a former army hospital in Clinton have been subject to ongoing criminal activity. Image source: the authors.**

As a result of this criminal activity, the police department has had to dedicate staff periodically to patrol the 40-acre site. The disproportionate

amount of complaints relative to the rest of the city has also necessitated police staff working overtime at the site, which has impacted the police budget. The grounds surrounding the former army hospital is also the site of a recent Safe Routes to School path. However, due to concerns surrounding the criminal activity in the area, children are now bused around the hospital, and the path is not utilized. Sites like the former Schick Army Hospital are prime examples of how brownfields sites, left in bad shape, can negatively affect social cohesion of communities.

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# Section 4: Brownfields Inventory and Prioritization

## 4.1 Inventory Methodologies

Central to the IA Reuse Readiness Toolkit is the first component, a system for inventorying brownfield sites throughout the ECIA region. Ideally, the inventory should contain sufficient information on each site to enable staff at ECIA to identify brownfields best prepared for reuse and most likely to benefit from testing. Any additional information should serve to support EPA grant applications to assist those properties for which environmental testing reveals enough contamination sufficient to require cleanup.

To begin our research as to the kinds of information necessary to identify, inventory, characterize, and assess brownfield sites, the project team reviewed several brownfield inventory programs from across the United States as well as grant application forms from the EPA. The kinds of information gathered, the methods for doing so, and the weights attached to different categories were examined. A comparison chart of some of the brownfield inventories can be seen in Appendix D.

The review process revealed a wide range of approaches to inventorying brownfields, with only a few key commonalities. Nearly all of the inventories examined asked for information regarding municipal ownership of the site, past uses, current condition, parcel size, whether or not there were existing structures, and any known contaminants. Based on the near universal use in other brownfield inventories, all of these fields were incorporated in the IA Reuse Readiness Toolkit inventory as well.

Beyond these six site descriptors, additional information gathered by the various inventories were found to be highly variable. Some require extensive amounts of information about redevelopment plans, existing infrastructure, conformity with surrounding uses, proximate roadway access, and adjacent redevelopment, among other site characteristics. Such is the case with the inventory document developed by the Delta Institute, a Chicago-based environmental non-profit with a focus on brownfield redevelopment.[74] Others, such as the Berkshire Regional Planning Commission, a Massachusetts-based planning organization with a fully developed brownfield program, took a more limited information gathering approach, requesting only basic information on past uses, current ownership and zoning, parcel size, and known or likely types of contamination.

Initially, the approach taken by the Delta Institute seemed promising in that it provides a more comprehensive picture of each site. However, an interview with environmental engineer Margaret Renas, who helped develop and deploy the inventory mechanism, revealed difficulties encountered when the process was utilized in two initial locations – Fremont County, Iowa, and the Little Village neighborhood in Chicago.

Challenges described by Renas included volunteers feeling overburdened by having to gather information for 31 separate fields for each site, as well as inventory fields being left blank resulting in a second round of data collection.[75] Furthermore, despite the extensive information gathered, the inventory did not meet its objective of sufficiently differentiating sites to identify 20 priority locations out of an initial set of 50 through scoring alone. A brief summary narrative had to be written to supplement the score for each site to further distinguish between them.[76] The entire process was characterized by Renas as "labor intensive," which discouraged volunteer participation and proved costly in terms of staff resources. The inventory mechanism is currently being reworked as a result.[77]

The difficulties posed by too many fields leading to less than optimal results are supported by research into survey design dating back decades. This includes a meta-analysis conducted in 1991 of previous studies that found longer sets of questions corresponded with a decline in response rates.[78] More recent investigations into electronic surveys have found similar patterns. This includes two separate studies that found as the perceived length of time needed to complete a set of questions increased, the willingness among participants to do so decreased.[79' 80]

The quality of responses can also be adversely affected by the length of a set of questions. A study conducted in 2004 found that surveys taking more than thirty minutes to complete had higher "don't know" responses for questions that appeared near the end,[81] while a separate study in 2007 found that responses to items at the end of longer sets of questions were shorter and less precise than responses to questions at the beginning.[82]

As a whole, this information suggests that an important factor in ensuring the success of the inventory both in terms of the number of entries obtained and the completeness of information for each entry entails limiting the amount of information requested to that which is most directly necessary. This is especially important considering the goal of engaging each municipality in entering multiple sites – it is not simply a question of the

amount of time needed to enter information for each site, but also the time needed to gather information such as past owners and uses for a brownfield.

## 4.2 Brownfields Inventory

Based on this research, the team identified fields that represented information required for EPA funding and determined that such fields, along with those developed by ECIA for their brownfields coalition application form, should be the basis for the "priority" fields in the IA Reuse Readiness inventory. These fields are worth between 5 and 15 points, and the user information provided with the inventory makes it clear that most of the priority fields must be completed in order for a site to be considered a "top tier" candidate for testing. The team also identified fields in other inventories which were not required by the EPA but which might be useful in prioritizing brownfield properties in the ECIA region. These "supplemental" fields each have a value of 5 points or fewer, and the software user information explains that providing this information is optional, though it can help a community earn more points for sites it considers to be a priority. A more thorough discussion of the point system and the values attached to each field can be found in section 4.3.

Data gathering and entry is notoriously time-consuming, especially when it must be transcribed from paper forms into a digitized format. In contrast, electronic formats have been shown to have a more rapid response time, lower costs, and greater ease of use for data entry.[83] Because of this, the data entry forms have been built directly into an Excel repository using VBA, a programming language geared specifically toward Microsoft Office. By utilizing a familiar, ubiquitous software such as Excel, the likelihood of participation by city administrators located in the ECIA service area will be increased. These small urban clusters often have a limited administrative capacity, so the burden of this tedious work can be felt acutely.

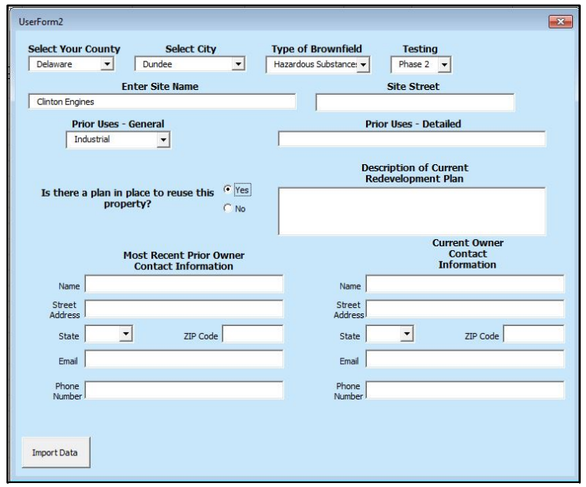


**Figure 4.1: Example of the inventory data entry form. Image source: the authors.**

To make entering information as simple as possible, the user form makes extensive use of dropdown fields and radio buttons, as can be seen in Figure 4.1. These dictated choices also help to standardize certain criteria such as past / current usage and prior testing at the site. This makes other functionality, such as pivot-table sorting on a given field, much easier to accomplish. Where more detailed information is required, narrative boxes provide space for lengthier responses. This type of data entry also has the advantage of being digitized from the outset, so the data is easily transferable among people and platforms.

In constructing the Excel repository, design principles shown to be user-friendly and lead to higher completion rates were utilized. These include an initial screen containing the purpose of the inventory, line lengths that limit the need for left-to-right scrolling, and additional instructions embedded next to the response fields.[84] Additionally, the team conducted pilot testing of the entry process for submitting a brownfield site to the inventory in each of the three focus communities, discussed in greater detail in section 4.5. Such pilot testing has been shown to be effective at reducing technical difficulties.[85, 86]

When a user submits sites to ECIA for review, the administrator of the inventory is able to copy them into a "master" inventory that contains all submitted sites. In addition to having access to all submitted records, the administrator has the ability to mark a site as "valid" through functions available only to administrators. By logging in as an administrator, the user is able to subsequently alter the text content on any tab, and the "Admin" tab becomes visible. This tab contains information that is loaded into the Data Entry dropdown lists. All tabs, with the exception of the repository tab itself, are locked when the inventory is opened. Should changes be made in the future (i.e. a change occurs in the scoring system), ECIA can alter the relevant tab and send out the updated toolkit.

## 4.3 Tiered Prioritization System

In addition to creating an inventory system for brownfields in the ECIA region, the team also was tasked with creating a prioritization mechanism that can assist in identifying the brownfield sites most likely to benefit from testing and most prepared for reuse. Such sites represent regional priorities, and their priority status is based on information such as willingness of the landowner to participate in testing, known past uses, current redevelopment plans, and condition of existing structures, among other criteria.

At the same time, communities participating in the inventory process should be able to advocate for sites representing local priorities. Thus, the prioritization process includes the ability to signal the importance of the site from a community perspective while also facilitating the ability to recognize further steps needed for a community to undertake to make the site a viable candidate for regional prioritization. These two ideals require

the prioritization process to be transparent and comprehensible – communities need to be able to understand how and why the sites they are entering into the inventory are scored.

As a result of the research done on inventory and prioritization mechanisms, as well as ongoing conversations with ECIA as to goals for the brownfields coalition, the team developed a prioritization mechanism that utilizes numeric values assigned to the criteria fields within the inventory. The fields have been divided into three categories: mandatory fields, priority fields (which includes the redevelopment plan fields), and supplemental fields.

Mandatory fields carry no value; they are required as a baseline of information and include information such as site name, location, and parcel size. Priority fields correspond with information needed to obtain funding for testing and cleanup, including information on current condition and use of the site. These fields have a value between five and fifteen points based on the information provided. Supplemental fields provide slightly more detail about specific concerns for the site such as nonconformity with surrounding uses, flooding concerns, and site security. Such information is not required for funding but may facilitate a more targeted grant application for the site. These fields are worth 5 points each.

A complete list of the inventory fields and their point values can be found in the table in Appendix E. This information also is provided to those entering information into the inventory so that the process is transparent. Users know exactly how many points each response earns for each site. Once a site is entered, the values for the various fields are totaled within the Excel repository and serve as a "score" for each site.

These scores are used to place brownfield sites within a three-tiered prioritization hierarchy. The highest priority sites are designated as "Top Tier." Such sites have almost all of the key information gathered for the priority fields and have scored highly in fields indicating they are strong candidates for redevelopment. These locations have a score of 150 or higher out of a possible 200 points.

Second Tier sites are those for which substantial preliminary work has been done and for which most, though not all, priority fields have been completed. Such sites have a score between 120 and 149. The second tier includes properties for which a detailed plan for reuse has not yet been established.

Third Tier sites are those which should not be considered a priority at this time, but which are included in the inventory as sites that a community may someday hope to address. Such sites are missing substantial information and have a score lower than 120. They may have suspected contamination but there is no indication of health concerns or other immediate dangers to surrounding residents. These sites require additional background material in order to qualify for EPA grant funding.

Within the scoring system, the priority fields provide guidance as to the information that needs to be gathered in order for a site to be considered a regional priority. For example, it will be clear to users that providing contact information for prior or current owners will aid in raising the site score and advancing the property's priority status.

Supplemental fields also serve an important purpose within the prioritization mechanism. First, they allow communities to advocate for properties they deem a priority by providing additional information that raises the total score. The higher scores also provide some indication as to those sites into which communities have invested the most effort. Second, the supplemental fields represent steps toward completing a priority field in the future. For example, a site lacking an existing redevelopment plan but for which consideration has been given to existing infrastructure, surrounding uses, and potential buyers, will better able to formulate a redevelopment plan in the future.

## 4.4 Differentiated Point Values

The point values assigned to priority and supplemental fields can be described as having differentiated and non-differentiated scores. For the purposes of prioritizing sites, differentiated point values are assigned to characteristics related to redevelopment potential and/or compelling need for Phase I or II ESA. Scores in these fields are varied depending on the response.

In contrast, non-differentiated scores are assigned to fields which help determine a site's eligibility for EPA site assessment grants but do not necessarily distinguish a site in terms of redevelopment potential. Responses in these fields can be varied, but the points are assigned solely on the basis of whether or not the information is provided and not on the content of that information.

A complete table of inventory fields and their corresponding points can be found in Appendix E. These point values went through several iterations and were developed and revised over the course of several months. They reflect research conducted by the team into brownfield scoring systems, prioritization criteria used by the EPA and the Iowa Land Recycling Program, feedback from ECIA and the brownfields consultant it has hired to conduct site assessments, and community administrators who tested the software. Further explanation of the twelve fields with differentiated point values and the reasoning behind those values is given in the paragraphs that follow.

**Field 1: Is there a redevelopment plan for the site?**

**Points assigned: Yes (10 points), No (0 points)**

This question is the first of three that directly address the redevelopment plan for a site and is meant to function as a "gateway" question to the two related fields that follow it, and which require increasing detail regarding the redevelopment plan. As such, it is structured as a simple yes or no question worth a total of 10 points. If a municipality has a plan for how the site will be reused, they are awarded the full value for this field, and if they do not, the zero score is meant to signal the need to develop such a plan.

The score for a site can further be raised by answering the subsequent redevelopment questions, which ask for more detail about the plan. The first, "What type of future use is proposed for this property," divides future uses into categories (industrial, commercial, mixed use, public facility, residential, and green space). Because these categories are meant to serve as a writing prompt to help users begin thinking about how to describe the redevelopment plan in the next question, each of the categories is given five points. If, in the future, certain uses are deemed a priority over others, ECIA can further differentiated the values in this field as well.

The final redevelopment question asks for a written description of the redevelopment plan that offers more specifics. Users must enter a description at least 200 characters long in order to obtain the full 15 points for this field. Taken together, the three questions focused on the site redevelopment plan offer a maximum score of 30 points, the most for any fields in the inventory. The high combined point value, and the grouping of these three questions on their own tab, emphasize the key importance of this information.

**Field 2: Current use or zoning classification**

**Points assigned: Industrial (10 points), Commercial (10 points), Mixed Use (8 points), Public Facility (6 points), Residential (5 points)**

There are five possible responses to this question, with the maximum points awarded to properties currently zoned or used for industrial and commercial purposes. In part, this is because such sites are most commonly associated with contaminants of concern. Industrial sites, for example, often have hazardous, persistent substances such as heavy metals and acids. Commercial sites such as dry cleaners often produce waste products such as chlorinated solvents, which are potentially hazardous to human health. A formal site assessment would need to be conducted to confirm the (non-)existence of these contaminants, hence the higher point values given to prioritize these sites. Should such sites be returned to a similar use, they also would have the highest potential to generate economic activity for the community, a priority for EPA grants. This also factors into the higher score assigned to these responses.

Mixed-use sites top the remaining three responses in terms of point value. The presence of residential units within such structures may have limited the use of hazardous substances in the commercial activities on site. Here too, a formal site assessment would be needed to be certain. Thus, the points assigned reflect the need to conduct such an assessment are slightly reduced, based on the reduced risk represented by the site. Likewise, the points also reflect the potential economic value of redeveloping such a site for a similar use – it would generate economic activity for the community, though perhaps not as much as a larger retail or manufacturing operation.

Public facilities and residential sites are assigned six and five points, respectively. Redeveloping public facilities is not as high a priority as returning other, more financially attractive properties to tax generating activities from a grant perspective. Residential sites receive the fewest points because these sites are the least likely to have serious, migrating contamination and are limited in their capability to stimulate economic revitalization. It

cannot be emphasized enough that one of the goals of brownfield redevelopment should be attracting investment that generates a wide-reaching benefit to the community.

**Field 3: Current condition of the site**

**Points assigned: Buildings maintained (10 points), Buildings unmaintained (10 points), Site Vacant (5 points)**

This field is primarily intended to ascertain whether a site contains buildings and the general condition of those structures. Having buildings on a site can entail both opportunities and threats. The presence of a maintained building presents an opportunity for easier repurposing of a brownfield site, but an unmaintained building can add to the perception of blight and present safety issues if the site is improperly secured. Although these two options represent two ends of a spectrum, both have been awarded ten points – the former because of the high redevelopment potential, the later because of the dangers that such a sight may represent. Vacant lots, in contrast, are awarded only five points because these sites have a lower redevelopment value and also are potentially less detrimental to a community's economic and social health.

**Field 4: Did a previous investigation reveal a responsible party?**

**Points assigned: Yes (0 points), Unknown (2 points), No (5 points)**

If a prior investigation revealed a responsible party, that person or persons may be liable for some or all of the cleanup costs and, consequently, the use EPA grant funds may be restricted. For this reason, a "yes" response is awarded zero points, while a "no" response receives five points. The corresponding site gets higher priority as a better candidate for grant funds. "Unknown" responses receive two points in every field in which they are a possible response. This is for the sake of consistency across fields, and also to encourage users to enter a response rather than leave the field blank. Because a responsible party has neither been ruled out nor confirmed, the points assigned to an "unknown" response fall between the points assigned for a "yes" or a "no."

**Field 5: Is the responsible party able to contribute financially to cleanup at the site?**

**Points assigned: Yes (0 points), Unknown (2 points), No (5 points)**

If a responsible party was identified, this question addresses their viability as a funding source for testing and, if needed, cleanup. If the responsible part is able to pay for testing, the site is awarded no points. The EPA will almost certainly not disburse testing grant money to sites when legal liability can be assigned to a responsible and financially solvent party. As with the previous field, an "unknown" response warrants is awarded two points, while a "no" response is awarded the full five points.

**Field 6: Did the current owner cause or contribute to contamination at the site**

**Points assigned: Yes (0 points), Unknown (2 points), No (5 points)**

Similar to the prior questions, this question seeks to clarify what type of grant money the site is eligible for. A "no" response indicates eligibility for EPA grant money in the future and is accordingly awarded five points. An "unknown" response is a flag for further investigation, while a "yes" response may limit the ability of ECIA to apply EPA assessment or cleanup grant money to this site.

**Field 7: Did the applicant cause or contribute to contamination at the site?**

**Points assigned: Yes (0 points), No (5 points)**

A "yes" response in this field would indicate that the responsible party (in this case the applicant) is ineligible for cleanup grant money and is summarily awarded zero points. A "no" response clears the way for a site to have grant money applied, as the applicant has no outstanding liability issues, and so this response is awarded five points. Unlike the previous field, "unknown" is not given as a possible response in this field. This is because while an applicant may not know if a previous owner has contributed to contamination at the site, it presumably knows its own role in regard to the site.

**Field 8: Type of applicant**

**Points assigned: Municipality (10 points), County (10 points), Nonprofit (7 points), 28E Organization (7 points), Area Development Corporation (7 points), Economic Development Entity (7 points), Private Entity (5 points)**

Point values in this question reflect the mission of ECIA – to serve member communities and counties. As a result, the highest priority for ECIA, who is ultimately responsible for submitting assessment funding requests to the EPA, are the governments it was created to serve. This is reflected by the points awarded to "municipality" and "county" responses, which are both awarded 10 points. The responses that elicit seven points may still represent properties with strong redevelopment potential, but are secondary priorities in relation to those put forward by an ECIA member government. Last, private entities requesting assessment money are given only five points because they are ineligible for EPA cleanup grants, though they may be in negotiation with a city, county, or non-profit to transfer ownership of the property.

**Field 9: Is the property located in a central business district?**

**Points assigned: Yes (5 points), No (0 points)**

This field is meant to call attention to properties that feature prominently or visibly in a community. Shuttered buildings or vacant lots along or near a main street in a rural community give the impression of disinvestment.

Awarding five points to sites that are in or near central business districts serves to prioritize sites that could catalyze additional redevelopment of adjacent properties – a practice the EPA is highly interested encouraging.

**Field 10: Is the site in a low-income or predominately minority neighborhood?**
**Points assigned: Yes (5 points), No (0 points)**
This question addresses social equity concerns by awarding points to sites in neighborhoods that are more likely to be located in an economically distressed neighborhood. Government intervention to break the cycle of divestment from these neighborhoods is a high priority, as is assessing whether or not contamination could be harming vulnerable socio-economic groups. A narrative field follows this question asking applicants to provide a description of the neighborhood. Using the information provided, ECIA can conduct further data collection for the area to better understand the demographic makeup of the surrounding residents. Additional grant opportunities may be available for sites for which there are environmental justice concerns.

**Field 11: Is there adjacent redevelopment planned or ongoing?**
**Points assigned: Yes (1 points), No (0 points)**
Though a low-value field, this question helps ECIA to identify sites in areas already undergoing redevelopment. An additional four points are awarded for providing a description of the adjacent redevelopment in a narrative field that immediately follows this question. Awarding points for adjacent redevelopment reflects the priority placed by the EPA on identifying "catalyst sites," locations where redevelopment at one site can spur redevelopment in the surrounding area or keep redevelopment momentum going.

**Field 12: Have photos of the site been submitted to ECIA?**
**Points assigned: Yes (5 points), No (0 points)**
Having photos of a site helps ECIA to determine the condition of the property. It also provides documentation for future use – including before and after comparisons that can be used to show communities what is possible with EPA assessment grant money. Additionally, taking photos of a site is an easy task that requires no specific knowledge, so it is a simple way to enable communities to advocate for sites they would like to see regarded as a priority. Finally, photos of sites can help ECIA staff verify and expand upon descriptions of the sites provided in previous fields.

## 4.5 Altering point values in the future

All of the point values assigned to fields in the priority and supplemental categories, including those discussed in the proceeding sections and those listed in Appendix E, can be altered in the future as priorities change as to how EPA grant funds are awarded or as priorities shift within the ECIA service area. In order to accommodate this, technical materials are provided as part of the IA Reuse Readiness Toolkit that explain how to alter the coding for the inventory software. An example of this documentation can be found in Appendix H

## 4.6 Community feedback

Community feedback has been critical to the development of the inventory software. During the month of February, the project team travelled to each of the three focus communities (Preston, Maquoketa, and Clinton) to undertake testing of the software and gather feedback on its functionality and scoring system. The software was emailed to each of the communities one week in advance of the trips to allow users to interact with it independently, and then the team met with those who had experimented with the software to ask questions about the experience.

As noted previously, the three communities vary in size from just over 1,000 residents to more than 26,000. The position and technical expertise of the person who would likely be using the inventory are likewise varied. In Clinton, the software was tested by the city engineer and an administrative assistant from the former planning department. In Maquoketa, the city manager/zoning administrator tested the software. In Preston, the smallest of the three communities, the software was tested by a community volunteer engaged in grant writing and economic development for the community.

There were multiple goals for the tests for community members:

1. Gather feedback on the scoring fields
2. Determine the usefulness of the supplemental fields, as well as whether or not they were relevant to brownfield sites that communities had in mind for redevelopment
3. Compare the toolkit with the current process of manually filling out a request for services form through ECIA
4. Identify initial sites to be entered into the inventory
5. Share the outreach materials and learn whether/how the communities would be distributing them
6. Fix minor technical and design issues

The community trips served these goals well. The software and the outreach materials were well received during the demonstrations, and all four city representatives stated that the system was an improvement over the paper request for services form that had previously been employed. Among the feedback received was a suggestion to score property acquisition through direct purchase the same as property acquisition through tax foreclosure, bankruptcy, or abandonment (previously differentiated in the scoring system) because cities often will agree to forgive outstanding tax or nuisance fines in return for purchasing property at a minimal price. In fact, one of the brownfield sites to be entered into the inventory was purchased in this manner. Scoring the acquisition methods differently would effectively penalize cities for working with property owners to resolve such issues amicably.

Other feedback included approval of several supplemental fields, including those dealing with site safety and security, flooding concerns, and proximity to low-income or minority residents. Those testing the software said they had observed these issues at sites they were hoping to submit to the inventory and offered anecdotal evidence of specific sites where these issues were most relevant. They felt these criteria were important considerations and a valuable way to convey why the properties they were submitting to the brownfield inventory were specifically of concern to the community.

The team also received valuable feedback from the communities on the wording of some of the fields and other phrasing that might make the information being requested more clear to both city officials and community volunteers. In addition, users alerted the team to some technical issues such as the need for a scroll bar on the user form. As a result, the testing process proved to be incredibly useful for both improving the mechanisms as well as exciting communities about using the toolkit in the future to identify and assess their brownfield sites.

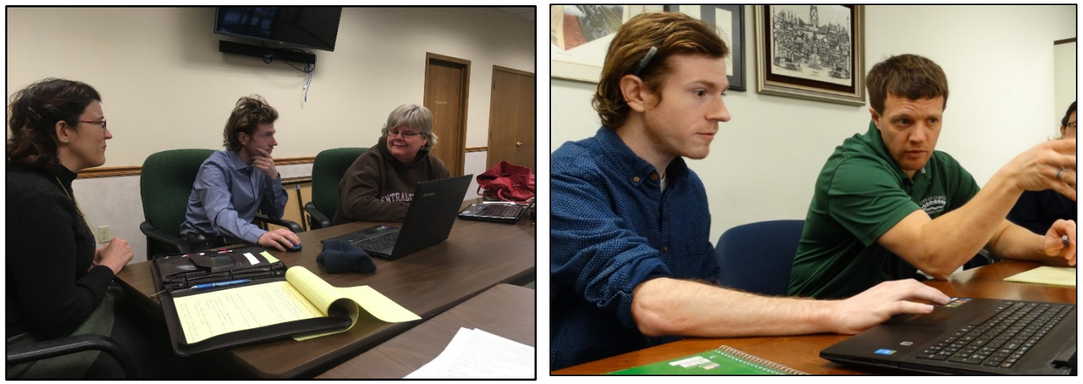

**Figure 4.2: The team met with city officials in Preston (left), Clinton (right), and Maquoketa (not pictured) to gather feedback on the toolkit. Image source: the authors (left), Travis Kraus (right).**

# Section 5: Outreach

## 5.1 Fact Sheets

During the early stages of the project, the team visited potential brownfields sites in Dubuque, Maquoketa, Delmar, Clinton, and Sabula. While speaking with town staff and property owners, it became clear that knowledge gaps were a potential hurdle for the project. There seemed to be varying degrees of understanding as to what constituted a brownfield among those charged with identifying such properties. There was also limited knowledge as to the testing that could be done on site and what the potential outcomes would be.

As an example, the city manager for Clinton pointed to a former YMCA as a potential brownfield site on the basis of pool chemicals and asbestos in the building materials, but then was unsure whether the asbestos and mold in a former post office directly across the street was "enough" to classify that building as a brownfield. Given that redevelopment of both sites was inhibited by the potential presence of contaminants, these two sites meet the definition of a brownfield as established by the EPA. Phase I environmental assessments at both sites would further clarify the extent of the contamination and what cleanup, if any, would be required. This, in turn, would clear the way for redevelopment of each site, either by establishing the necessary steps to manage the site or by clearing the suspicion of contamination.

To address this problem, the project team began examining other brownfields programs to see how such questions were addressed and discovered that many have outreach materials available either on websites or as print materials. These include the Coralville Brownfields Program and the Upper Explorerland Regional Planning Commission Brownfields Project, both of which created materials in addition to those available through the Iowa Department of Natural Resources Land Recycling Program (LRP). It also includes programs like Sustainable Jersey, which provides a template for municipalities participating in their brownfields programs to create their own fact sheets. Such materials help inform those participating in the programs about key concepts and practices in regards to brownfields.

While reviewing these documents, the team also began a conversation with Mel Pins, director of the Iowa Brownfields Redevelopment Program, and Grace Griffin, an Americorps volunteer with ECIA, to discuss the materials available from the state, how they have been received generally, and where the key knowledge gaps seem to be. Based on this conversation, the team generated a list of topics that seemed relevant to the ECIA Brownfields Coalition:

- The basic definition and types of brownfields
- An explanation of Phase I and II testing and their benefits to landowners
- A list of cleanup funding options and tax credits
- The sequence of necessary steps from testing to redevelopment
- An overview of liabilities
- Brownfield revitalization success stories
- Ways to prevent future brownfields

Based on which topics were most relevant to the inventory framework, the team committed to writing the first four documents. The fact sheets synthesize the information the team has acquired about brownfields and present key concepts and practices in a condensed, easy-to-read format. The resulting documents are shown in Appendix F.

The outreach materials were created with a dual purpose. The first is to inform city staff members charged with identifying brownfields and entering them into the inventory. Because consent is required from the current landowner in order to conduct any environmental site assessments, the second purpose is to provide information for key stakeholders that city staff members may wish to approach about participating in the program. As such, the materials were created to be accessibly written and are suitable for distribution to members of the public.

As part of the process of creating the four fact sheets, the team also developed a formatting style for the outreach materials as a whole. From these fact sheets, style templates within Microsoft Word were developed that ECIA can edit or use to create their own materials in the future. Feedback on these outreach materials were received from environmental consultants at the Delta Institute and Impact 7G, as well as from Mel Pins, in order to keep the information consistent and supplemental with fact sheets used by those organizations.

The fact sheets created by the team can be accessed from within the Excel toolkit using a button control on the home page, as shown in Figure 5.1. The hope is that if any questions related to brownfields arise among those using the toolkit, they can easily be addressed. The files for the fact sheets are included in a zipped file along with the actual Excel toolkit to be distributed to users. The team also hopes that the outreach materials will be distributed to the relevant local parties to the brownfield redevelopment process, at city representatives' discretions, and that the materials will be used in conjunction with Iowa DNR and environmental consulting

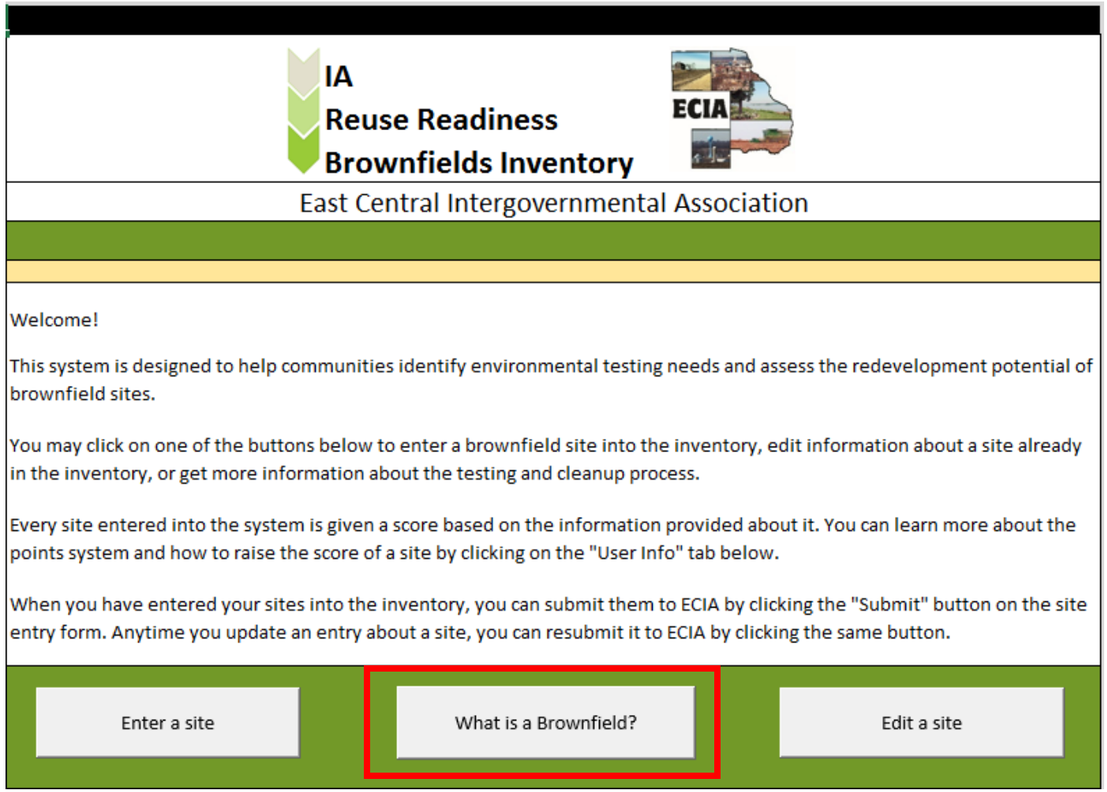


**Figure 5.1: Outreach materials can be accessed through the "what is a brownfield" button on the inventory software homepage. Image source: the authors.**

firms.

## 5.2 Potential Site Maps

In addition to the brownfield fact sheets, the team has also developed a series of maps in support of the inventory process. These maps, which can be found in Appendix C, show known contaminated sites and leaking underground storage tanks as obtained from IDNR records. For communities that are unsure as to where brownfield sites may be, these maps can indicate locations worth examining – not all will be brownfields (if the sites continue to be in active use, for example, the would fall into the category of contaminated sites but not brownfields), but those corresponding with parcels of land where redevelopment efforts have been or would be inhibited by the contamination status would be potential sites to include in the inventory.

Just as the total number of brownfield sites in the U.S. remains unknown, the total number of brownfield sites in the ECIA area will likely remain unknown in the foreseeable future. It is not the goal of the project to catalogue every site but rather to inventory those sites that are priorities for redevelopment at the community and regional level. Because of this, and due to the amount of time required to gather information on each site, it is likely each community will choose a subset of priority sites to submit to the inventory rather than listing all potential brownfields within their jurisdiction. For this reason, the maps of known contaminated sites and leaking underground storage tanks have been overlaid with additional information that may help communities identify priority sites.

This includes the maps shown in Appendix C depicting potential brownfield sites in relation to areas with higher proportions of low-income and minority residents. Because such residents are more vulnerable to the adverse impacts of brownfields, a community may choose to prioritize brownfields in these areas. The maps created to support the inventory process also include a set depicting potential brownfields sites in relation to floodplains, which also can be found in Appendix C. In two of the focus communities, Preston and Maquoketa, there are no known contaminated sites or leaking underground storage tanks located within the floodplain, though the communities may be aware of other potential brownfield sites in these locations. The map for Clinton (Figure 5.2, on the following page), however, reveals ten sites located within the floodplain containing known contamination or leaking underground storage tanks. In this case, the map may help the city identify sites that should be given priority consideration, given the possibility of floodwaters carrying contamination from these sites into other areas and thereby enlarging the affected area.

A long term goal for the toolkit is that once ECIA's regional inventory is populated, maps similar to this can be created, using brownfields sites instead of LUST sites. This will assist the regional government in contextualizing and planning for future brownfields redevelopment. To aid in identifying such sites, a supplemental field in the toolkit asks users to describe any potential flooding concerns on the site. This field was positively received by the city manager of Maquoketa, who described major issues that occurred during remediation of a brownfield site in town due to flooding.

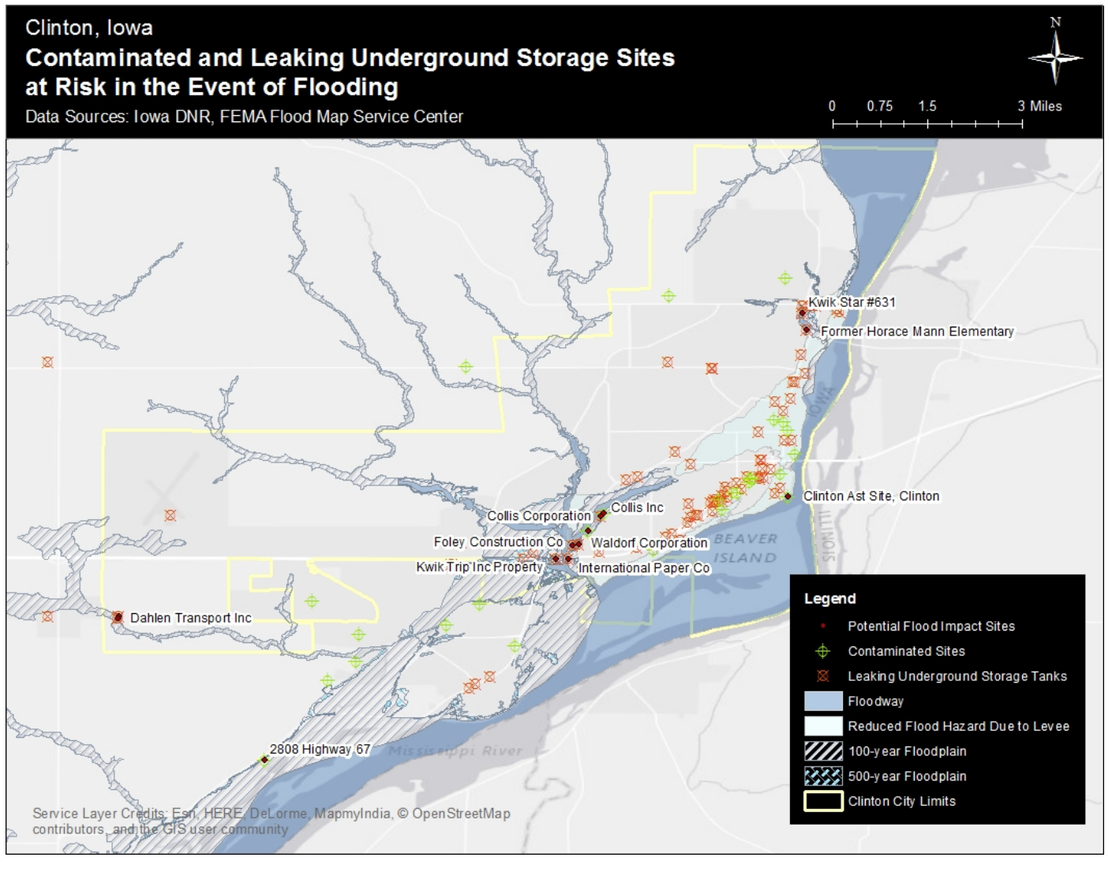


**Figure 5.2: A map showing known contaminated sites and LUST sites for the city of Clinton shows 10 such sites located in the floodplain. Source: the authors.**

# Section 6: Land Bank Investigation

## 6.1 Land Bank Overview

Land Banks are governmental or nonprofit entities that specialize in the conversion of vacant, abandoned, and foreclosed properties into productive use.[87] They were created as a response to the downward spiral that often occurs in the traditional system of tax foreclosure and property disposition, whereby the government sells or auctions off tax liens. Essentially, that system amounts to liquidation. Many of these properties are purchased by speculators who view the acquisition as a traded investment and have no interest in reinvesting or redeveloping the properties. This phenomenon is common among brownfields, which land banks can be used to address.[88] Land banks can operate either as sole entities or as a subset of a larger organization. Though the principal policy goal of many traditional land banks has been to develop housing, land banks designed to foster economic development, such as those which seek to address brownfields, hold much potential.[89]

Land banks seek to address the market failures resulting from traditional foreclosure and disposition system. Specific means of doing so may vary between entities, but land banks have three core powers:

1. Land banks can acquire titles to problem properties through the tax foreclosure process, donations, local government acquisitions, or by purchase on the open market.

2. Land banks assume the task of holding a property for which it has acquired a title. Depending on its structure and community needs, the land bank will have powers relative to the management, rehabilitation, and demolition of these properties. Alternately, land banks with a varied inventory may instead have contracts with a third party for property management and operation of the stock.

3. Ultimately, land banks convey these properties to third parties in accordance with community needs. Different land banks typically set their pricing policies based on pre-existing disposition laws in each jurisdiction. Priorities of local governments and socioeconomic conditions weigh heavily on the pricing policies, as do the types of developers for which the title to properties will be conveyed.


**Figure 6.1: Typical land bank process involving their three core powers. Source: the authors.**

Other powers may exist, such as the ability to extinguish delinquent property taxes. On rare occasions, the power of eminent domain may be given to a land bank.

Land banks focused on brownfields can help remove redevelopment barriers, remedy size and shape problems by joining previously disparate parcels, take on initial risk by preparing land in weak real estate markets, and convey properties to developers for nominal fees or rates below fair market values.[90] Although existing brownfield grant programs also may be a means to foster redevelopment, they often are criticized for having complicated remediation requirements that may hamper interest by private investors. In such cases, land banks may be a more expedient means of returning properties to productive use.

Key to evaluating possible operating structures for a potential land bank operated by ECIA is understanding the primary objectives for such an endeavor, the overarching goal of which are to overcome barriers to redevelopment posed by the brownfield status. These barriers include reluctance on the part of owners to undertake site assessment for fear of incurring liability should contamination be found. Because the cost for remediation can be high, these owners may believe they lack the financial resources to address contamination should it be their responsibility to do so. Similar liability concerns may likewise prevent potential buyers and city or county governments from acquiring the property. As a result, brownfield properties may sit "mothballed," that is, stuck in a state of disuse without any redevelopment likely or possible.

To overcome these barriers, a land bank should serve first and foremost as a means of applying federal EPA grants to the assessment and cleanup of brownfield sites. Currently, the EPA allows quasi-governmental

organizations such as ECIA to apply for community-wide assessment grants. Such funds can be funneled to any property owned by a non-profit or municipality within the area specified by the grant. This is not the case with cleanup funds, however, which are site specific and can only be applied to properties owned by the grantee.[91] Thus, ECIA would need to own any properties for which it seeks EPA cleanup funds.

Another objective of the land bank is to address the liability concerns attendant with brownfield sites. The most direct means of doing so would be accomplished through the acquisition of the properties, which would allow the land bank to assume the liability for any contamination discovered through testing of the site. It is possible that provisions in a leasing or property management agreement between the land bank and the property owner could stipulate that the land bank will address any contamination as part of its use of the site. This option entails more risk, as the cost of remediation could exceed the land bank's operating funds, in which case the owner would remain liable.

## 6.2 Land Banking in the United States

Land banking as it exists today has been utilized in the United States for nearly 40 years and has proven useful in bringing problem properties back into productive use. The first land bank was the St. Louis Land Reutilization Authority, established in 1971, which began operating as a response to the rapid increase in tax delinquent properties and abandonment that followed the loss of industrial jobs.[92] Cleveland, Louisville, and Atlanta soon followed as other early adopters of land banking.

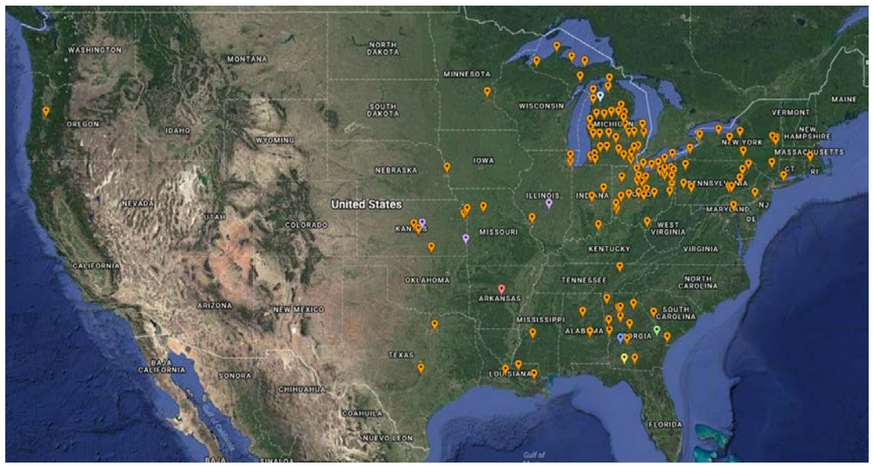


**Figure 6.2: Distribution of land banks in the U.S. as of 2015. Source: Center for Community Progress.**

By the turn of the 21st century, land banking had gained wide acceptance as a successful tool for the redevelopment of vacant, abandoned, and tax delinquent property. Formed as a result of new legislative initiatives to streamline the tax foreclosure process and evolving demographic conditions within their respective states, the Genesee County Land Bank anchored by Flint, Michigan (established in 2002) and the Cuyahoga County Land Bank in Cleveland, Ohio (restructured in 2008 from the original Cleveland Land Bank) represent the most recent generation of land banks. Built on lessons learned from past efforts, land banks with a clear and direct form are now prevalent in New York, Georgia, Missouri, Pennsylvania, Tennessee, Nebraska, Alabama, and West Virginia.

## 6.3 Case Studies

The Suffolk County Landbank, the Connecticut Brownfields Land Bank, and the Cleveland Industrial-Commercial Land Bank are three case studies for the land bank feasibility study proposed in this report. Each of these land banks operate under different organizational structures, have unique regional context, and have had varying levels of success. All three, however, have a common purpose of serving the redevelopment of brownfields. In addition, the Genessee County Land Bank in Michigan and the soon to launch Des Moines Land Bank may also provide valuable insight into how a land bank could be implemented in the ECIA region. The following section briefly outlines these land banks.

### Cleveland Industrial Commercial Land Bank

*Overview*

Land banks are prevalent in Ohio, and the Cleveland Industrial Commercial Land Bank, established in 2005, is specifically aimed at acquiring, redeveloping, and conveying brownfields properties.[93] The main goal of the land bank is to assemble brownfields properties strategically for long-term business and community investment. The Cleveland Industrial Commercial Land Bank is housed within the Cleveland Economic Development Department.

*Financing*

Because of Cleveland's unique tax increment financing (TIF) structure, which allows TIF funds to be used as a debt reserve, the Cleveland Industrial Commercial Land Bank is able to utilize these funds to obtain HUD 108 loans. The loans in turn are used to finance acquisition, cleanup, and redevelopment of brownfield sites.[94] By leveraging these funds, the Cleveland Industrial-Commercial Land Bank has been able to acquire eleven properties.[95] The organization is also well supported by the city, and uses Clean Ohio and City Economic Development Funds, as well as proceeds from land sales.

*Organizational Structure*

It appears as though the Cleveland Industrial-Commercial Land Bank is staffed by members of the Cleveland Economic Development Department, and has no dedicated staff members. The chief contact for the land bank is also the Brownfield Program Manager for the City of Cleveland. It is likely that staff members devote only portions of their time to the land bank operations, and that land bank activities are just one of many activities done by the Economic Development Department.

*Recent Accomplishments*

Several commercial properties cleaned and currently for sale – Midland Commercial Park, a 23-acre former Midland Steel site is a recent success story. A brokerage firm charged with dealing in the site claimed that preparing the properties for the market would have taken decades without the assistance of Cleveland's clean-up help.[96] Past developments success include Garrett Square, a retail center in Cleveland's Glenville-Forest Hills neighborhood which was redeveloped into a grocery store and clothier from a vacant retail space. Because of the risks associated with cleanup liabilities and market characteristics, the Cleveland Industrial-Commercial Land Bank is very selective on the properties it acquires.

*Key Takeaways*

The Cleveland Industrial-Commercial Land Bank serves as a prime example for how a land bank focused on brownfields could operate. They meet the goals to finding sites, acquiring them, utilizing the funding mechanisms to assess and remediate them as necessary, then market them to turn them back to productive use. A glaring difficulty with modeling after the Cleveland Industrial-Commercial Land Bank also is that this land bank exists in a state where land banks are given many of the necessary powers to operate. Regardless of whether or not such a scale could be achieved in ECIA, the Cleveland Industrial-Commercial Land Bank serves as best-practice case for a brownfields focused land bank.

## Suffolk County Landbank

*Overview*

Established in 2013 the Suffolk County Landbank Corporation (SCLBC) was the first land bank in New York to have a specific program devoted to revitalization of brownfield properties in addition to traditional vacant residential land banking.[97] SCLBC is a non-profit entity. It was authorized under New York's State's Land Bank Act in response to the growing tax delinquent and potentially contaminated parcels on Long Island. It operates in cooperation with the Suffolk County government, though as a separate entity. The primary functions of the SCLB include reducing the number of tax delinquent and environmentally challenged properties within Suffolk County, recouping outstanding delinquent taxes from brownfield parcels, facilitating Phase I and Phase II testing of brownfield parcels, transferring tax liens from the county treasurer to SCLBC, and marketing and selling tax liens to qualified developers. [98]

*Financing*

The Bank's non-operating revenues is estimated to be $1,755,949 in FY16. This is made up largely from investment earnings ($401) state grants ($1,035,548), federal grants ($60,000), and other non-operating revenues ($660,000). The latter of the line items likely refers to proceeds from property sales.

*Operational Structure*

The Suffolk County Land Bank consists of a small staff including a president, project managers, analysts, an environmental analyst, a liaison from the County Health and Human Services Dept. A board of directors is made up of representatives from the Suffolk County Government, with a memorandum of understanding between the Suffolk County Landbank Corporation and the County. The directors are confirmed via the Suffolk County Legislature.

*Recent Accomplishments*

Early in 2016, the SCLBC began accepting Requests for Proposals (RFPs) for brownfields sites.[99] Of the eight submissions, four were chosen: a former industrial plating site, a former medical waste treatment facility, a former fueling station, and a former sand mining operation. Thus far, the lien transferal resolutions for these

sites have been negotiated and adopted by the Suffolk County Legislature. The sites are currently held by the bank, liens have been marketed, development agreements are currently being negotiated, and the SCLB will soon transfer site titles to their respective developers.[100] Additionally, in 2016 the Bank conducted 18 Phase I ESAs and 7 Phase II ESAs on tax-delinquent brownfield sites, in collaboration with the Suffolk County Department of Health Services.

*Key Takeaways*

The Suffolk County Landbank looks to be a successful land bank which focuses on brownfields. The land bank takes an active role in identifying and collecting outstanding liens, facilitating Phase I and Phase II assessments, marketing brownfields sites, and ultimately transferring them to productive use. However, the number of successful projects is so far limited. The entity also has a housing division focusing on dilapidated "zombie properties", and the land bank is still young. Despite this, the Suffolk County Landbank is a fairly transparent land bank and a promising model for regional brownfields land banks

### Connecticut Brownfields Land Bank

*Overview*

The Connecticut Brownfields Land Bank (CT BLB) is a single-staffed non-profit that assists in the redevelopment of former industrial properties with existing or perceived environmental contamination. CT BLB, a state-level land bank, manages resources on behalf of cities and municipalities that lack the capacity to make complicated land deals.[101] The non-profit company works closely with state and local officials, developers, and other stakeholders to provide technical assistance for brownfield sites. The land bank also provides site prioritization analysis and educational outreach. Importantly, the CT BLB recognizes brownfields redevelopment projects as a catalyst for community and economic development.[102]

*Financing*

The CT BLB primarily looks to the EPA's Brownfield Program grants for funding, though it also utilizes HUD sources and raises capital from social investors. The CT BLB still hopes to draw private capital investment into blighted areas. However it appears much of the organization's operating funds comes from fee services.

*Operating Structure*

The Connecticut Brownfields Land Bank consists of a single staff member. Two volunteers and two contractors also supplement the operations.

*Recent Accomplishments*

In 2016, the organizations' accomplishments come in the form of brownfields education outreach to Connecticut communities. The land bank has also had a role in consultation with city staff on discussing potential brownfield sites and redevelopment. It is unclear whether the organization's goal of assisting in procuring assessment, cleanup, and acquisition funds has actually happened as a result of the land bank itself.

*Key Takeaways*

The CT BLB represents another approach to land bank activity focused on brownfields. However, this organization appears to be operated by a single person and focus on consultation. It is hard to tell whether actual brownfield redevelopment has occurred as a result of the organization's work.

## 6.4 Recent land bank developments in Iowa

There are no land banks currently in operation in Iowa. However, the City of Des Moines's regional Capital Crossroads and Housing Tomorrow plans recommend the formation of a Des Moines land bank. Although at present there is little detailed information publicly available about this future initiative, the Neighborhood Services Planner for the city of Des Moines provided the project team with a draft copy of the program proposal to review. The DSMLB is intends to focus on revitalization, affordable housing, and commercial development in neighborhoods surrounding the city's urban core. Although this does not overtly include brownfield redevelopment, the DSMLB is a helpful example of a land bank being organized in Iowa and may be a useful partner should ECIA wish to pursue enabling legislation, discussed in more detail in the next section.

At the time of this writing, the Des Moines initiative has been tabled due to issues arising from current provisions within the Iowa Code. Specifically, a question was raised as to the legality of conveying properties to an intermediary entity that will not directly redevelop property into housing. However, in Spring of 2017, the organization began seeking 501(c)3 nonprofit status and is continuing to investigate ways to proceed, including bringing the issue of enabling legislation to the state legislature. When operational, the DSMLB nonprofit may share a similar organizational structure to ECIA's East Central Development Corporation (ECDC). For this

reason, maintaining a channel of communication with the DSMLB about ECDC activities may be mutually beneficial.

## 6.5 Enabling Legislation

As of 2017, Iowa has no state-enabling legislation for land banks, but neither are there explicit prohibitions against a land bank in the Iowa Code. Other regional land banks exist as non-profit entities and operate without express state-enabling legislation. Often, though, state-enabling legislation facilitates the development of land banks. This is because the procedures that address property abandonment and foreclosure are established at the state level, and tax delinquent properties represent some of the most pressing sites in need of intervention. Enabling legislation does more than grant permission to establish a land bank. It puts measures in place to streamline and/or simplify the process by which abandoned or tax delinquent properties can be foreclosed and the titles transferred to the land bank. This allows the properties to be rehabilitated and returned to the market within a shorter timeframe.

Enabling legislation can include some or all of the following provisions:

- *In rem* foreclosures: These are proceedings against properties rather than against property owners. As such, the need for the court to have jurisdiction over property owners in order to proceed with foreclosure is eliminated.
- Judicially supervised tax foreclosures: A change from administrative tax sales overseen by county treasurers to judicially supervised tax foreclosure increases the likelihood that the property will have an insurable title.
- Provision for constitutionally adequate notice: This requires notice of tax foreclosure proceedings to be given to all parties with a legal interest in the property. Providing notice of a tax sale in the local paper as the sole requirement does not meet the standards of constitutionally adequate notice.
- Shortened time periods between delinquency and foreclosure: In addition to allowing land banks to address tax delinquent properties more expeditiously, a shortened timeframe between delinquency and foreclosure can also inspire property owners to prioritize payment of past-due tax bills in a more timely manner.
- Allowance for bulk foreclosures: Such provisions, most applicable in areas where there is widespread tax delinquency such as Detroit or Atlanta, allow for a judicial process in which properties can be grouped together and foreclosed in a single action rather than treated separately.
- Elimination of "minimum bid" requirements for properties: Minimum bids require that the lowest price for a foreclosed property include the assessed value as well as the sum of all outstanding taxes, fines, and interest. In place of a minimum bid, enabling legislation can allow for the direct transfer of the property to a land bank.[103]

Not all of these provisions may be necessary or useful for a land bank in Iowa. *In rem* foreclosure, for example, is most useful in states where the foreclosure process becomes more complicated as the result of an absentee property owner who resides in another the state or country. This does not seem to be the case in Iowa. Likewise, the conditions that gave rise to the need for bulk foreclosure do not seem to exist in the state, and state law already requires constitutionally adequate notice.

If ECIA were to pursue enabling legislation to facilitate establishing a land bank, the two provisions that would likely be the most beneficial would be a shortened timeframe between delinquency and foreclosure and the elimination of minimum bid requirements for properties. Currently, under chapter 446 of the Iowa Code, an entity that holds the certificate for a tax delinquent property must wait one year and nine months before moving to transfer the certificate to a deed, after which an additional 90 days must be allowed for notice to the current owner. (This assumes the current owner does not pay off the outstanding taxes during that time, in which case the process starts over.) Thus, from the time a tax certificate is conferred in a tax sale to the time a property may be acquired, two years must pass. This does not include the additional time that lapses between a property becoming tax delinquent and that property being included in a tax sale, which can add another 8 months. Enabling legislation that streamlines this process would make it easier for land banks to acquire properties at tax sales.

In cases where parcels go unsold in a tax sale or receive bids that fall short of the total amount due, the county shall acquire the property pursuant to section 446.19 of the Iowa Code. The county can then resell the property, but must receive a minimum bid equal to the value of the land and the sum of the outstanding taxes, fines, and interest. This can pose a hurdle for a land bank hoping to acquire the property. Under Iowa Code section 446.19A, a county can gift the property to a non-governmental entity for less than the minimum bid if the recipient intends to rehabilitate the property to be used for housing. Although this would allow the county to gift some properties to a land bank, not all brownfield properties will be appropriate for reuse as housing depending on the extent of contamination. Moreover, a land bank established by ECIA may wish only to undertake the testing and cleanup of a site, but may leave redevelopment to another party. In such cases, the county may be unable to confer the properties to the land bank. For this reason, enabling legislation that exempts land banks from minimum bid requirements and allows counties to confer properties to a land bank in the same manner in which it makes intergovernmental transfers would greatly expand the capacity of the land bank to acquire and address a variety of properties.

However, though enabling legislation may be preferred, land banks can exist without it. The Cook County Land Bank Authority in Illinois is one such example, though it exists under a combination of specific conditions granted by the Illinois state constitution and a series of intergovernmental agreements. In order to operate in Iowa, a land bank established by ECIA at the present time would simply need to operate in accordance with current law. Four possible means of doing so are discussed in the following section.

## 6.6 Alternate Land Bank Operating Structures

In 2015, ECIA set up the East Central Development Corporation (ECDC), a non-profit corporation focused on revitalizing the five county area while serving low to moderate income communities and households. A land bank entity, overseen by ECIA, would likely operate under ECDC. ECDC also works with underserved neighborhoods that have experienced significant disinvestment. Though it is a new program, ECIA intends for ECDC to have a role in affordable housing development and rehab, economic and community development projects, downtown revitalization efforts, and neighborhood planning. ECDC also oversees their Special Needs Assistance Program (SNAP), a supportive housing program that assists disadvantaged populations. ECDC is an 11-member board, consisting of ECIA staff and representatives from cities and counties served by ECIA.

The project team has identified four ways in which a land bank under the umbrella of ECDC could operate under current Iowa law:

1) Land Bank as County Gift Recipient: Under this operating structure, the county would pass an ordinance establishing a process for gifting county-owned brownfield properties to a land bank. The ordinance would need to designate such property transfers as serving a public purpose. Counties could then acquire brownfield properties and donate them to the land bank. For cities, an extra step would be required: they would need to acquire the brownfield properties, gift said properties to the county, and then counties could gift properties to the Land Bank, which would then responsible for testing, cleanup, and resale of the property.
2) Land Bank as Direct Purchaser: Under this operating structure, the land bank would use its funds to acquire brownfield properties, either by bidding on liens at tax sales (which would then be converted into a deed following the required waiting period) or by directly purchasing the site from the current owner. The land bank would then undertake testing and cleanup of the site before selling the property to a suitable owner. Any profits from the sale would be used to acquire future properties.
3) Land Bank as Property Manager: In this alternative, a city or county would acquire brownfield sites and then contract with the Land Bank to manage properties. In this role, the land bank would undertake testing and cleanup, while the government entity would retain ownership of the property and be responsible for selling the site.
4) Land Bank as City or County Lessee: This final alternative would entail the city or county acquiring brownfield sites and leasing them to the land bank to undertake testing and cleanup. The term of the lease would have to be less than three years, but could be renewed for properties where cleanup has not been completed during that time. The city or county is responsible for selling the property.

## 6.7 Analysis of the Alternatives

Each of the proposed operating structures available to a land bank under current Iowa law has a number of strengths and weaknesses, which are detailed in the table in Appendix I and can be summarized as follows:

- In Alternative A, Land Bank as County Gift Recipient, the land bank would be able to acquire properties at little to no cost as they would be conveyed to the land bank by the county. This would allow the land bank to concentrate its resources on site assessment and clean up. The land bank would also not be subject to the same legal restrictions to sell the property for a "minimum bid" representing the assessed value and outstanding taxes, fines, and interest, as a city or county would. As a result, the land bank could incentivize redevelopment by returning the property to market at a lower cost, and the proceeds of the sale could be used to support land bank activities. A significant weakness of this approach is that it is more administratively complex and will require a lengthy initial process of passing an ordinance at the county level, which may be politically fraught.
- In Alternative B, Land Bank as Direct Purchaser, the land bank owns the brownfield properties in its portfolio and as such is able to apply EPA funds for both testing and cleanup to the site. Although this gives the land bank the greatest latitude to manage the sites, it entails a large initial investment in order to acquire those properties. Potential funding sources are unclear.
- In Alternative C, Land Bank as Property Manager, the land bank need only invest its resources in site assessment and clean up, while the city or county would have the responsibility of acquiring the site. A key weakness is the inability of a land bank to apply EPA cleanup grants to properties it does not own. As a result, this option is potentially more costly than Alternative A, since cleanup and remediation costs may exceed the purchase price of the land. The land bank would need to have a separate funding source from the EPA in order to finance cleanup activities.
- In Alternative D, Land Bank as City or County Lessee, the strengths and weaknesses are very similar to those of Alternative C. The land bank would not be required to purchase the property, but also would not be able to use EPA grants for cleanup. This alternative also does not alleviate liability concerns for the city or county. The operating costs of such a structure are more difficult to predict. Additionally, the term of a lease is restricted to three years, and long term leases would require continual renewals of a lease.

## 6.8 Recommendations

Based on the strengths and weaknesses outlined above, Alternative A, in which a county acquires and donates brownfield properties to the land bank (and cities work with counties to pass their acquired brownfield sites on

to the land bank), seems most likely at present to meet the objectives of positioning a land bank to assume liability for cleaning up such sites and apply EPA grants to do so. Because the properties would be gifted to the land bank, and proceeds from the sale of such sites could help fund future land bank activities, it is the most financially attractive.

Alternative B would likewise meet the objectives of enabling a land bank to assume liability for brownfield sites in its portfolio and utilize EPA grants for cleanup activities, though it would require substantial financial resources at the outset to purchase the properties. Funding sources to act as seed money for the endeavor would require additional research that is beyond the scope of this report. The initial costs of acquiring the land would also require the land bank to sell the property at or above its purchase price in order to remain financially viable, which may limit the land bank's ability to spur redevelopment through offering pricing incentives to buyers.

Alternatives B and D meet neither of the aforementioned objectives, as the property owners would retain liability for the sites and the land bank would be unable to utilize EPA cleanup funds. (If the land bank restricted its activities to testing brownfield sites, it would be able to apply EPA assessment grants to the properties it manages or leases. However, ECIA is able to do so at present without forming a land bank, so there would be no advantage to doing so unless it also wanted to help communities undertake cleanup where site assessment revealed it to be necessary.)

Although Alternative A is the best of the four options at present, it is important to note that there are restrictions to its application. Counties are able to donate property to non-governmental entities per Iowa Code Section 331.361.4, which reads:

> **The board shall not dispose of real property by gift except for a public purpose, as determined by the board, in accordance with other state law.**

Cities, however, are only able to donate property to other governmental entities, per Iowa Code 364.7.3, which reads:

> **A city may not dispose of real property by gift except to governmental body for a public purpose.**

As a result of these two provisions, a county would able to donate properties directly to a land bank provided it passed an ordinance defining the public purpose that was to be served by doing so. A city, however, would have to donate the properties to the county, which could then convey it to the land bank. To do so, both the participating county and city first would need to pass ordinances that clearly articulate the public purpose served by conveying properties to a land bank. Such purposes could include facilitating the testing and cleanup of properties before they are returned to the market. These ordinances would then need to be followed by individual resolutions passed by the city council or county board each time either government entity intended to donate a piece of property to the land bank. The resolutions would likewise need to articulate the purpose served by this action.

Iowa law requires an ordinance to be voted upon three times in three separate meetings in order to be established as law. The ordinance must obtain majority approval during each of the three votes. As a result of the need for both the county and any participating cities within that county to pass a resolution pertaining to the land bank, Alternative C, though the most financially feasible land bank structure, is also the most administratively complex. Because of this, it is strongly recommended that ECIA work closely with the participating governments and the city/county attorneys to craft the necessary ordinance and subsequent resolutions, and to be present for each vote in order to answer any questions that may arise from the public.

It may also be beneficial for ECIA to begin with a land bank pilot program in a single county (and perhaps even a single city within that county) before expanding the program. This would allow the project to build upon successes achieved in the first county, garner support in subsequent counties based on those successes, and use the original ordinance as a template for others to follow. Because of its size and the likely number of brownfield sites under its jurisdiction, the City of Clinton in Clinton County may be a good candidate for the pilot program.

Once the necessary ordinances are in place, the county and participating cities will need to pass a resolution each time either intends to donate a property to the land bank. Resolutions require only a single vote and may be passed during the same meeting in which they are proposed, though prior to that meeting a legal notice describing the property and the intent to donate it must be published and time must be allowed for a public hearing on the matter. Because of the time required to pass an ordinance combined with the time required for the resolution process, ECIA may find it beneficial to establish an annual enrollment period for the land bank. This may facilitate coordinated efforts between ECIA and the participating cities and counties for brownfield

acquisition, limiting the amount of time each year that is dedicated to the resolution process. It may also help further the legitimacy of the endeavor in the eyes of the public by establishing a set process.

## 6.7 Further considerations

The operating structures discussed above are based on the legal feasibility of establishing a land bank in Iowa under current law. The information presented is not legal advice and is not to be acted upon as such. It represents a starting point for conversations between ECIA, its member governments, and their respective legal counsels. Other considerations need to be examined as well in order to determine the overall feasibility of operating a nonprofit for such a purpose. In addition to the legal and procedural feasibility covered in this report, an analysis of market conditions and a more thorough examination of financial considerations should be undertaken to determine the overall feasibility of such an initiative.

Although such analysis was ultimately beyond the scope of this project, attempts were made to be mindful of financial considerations as potential operating structures were investigated. Nonetheless, a more formal and detailed analysis, including an investigation of available funding sources to assist in establishing a land bank, would enhance the initial investigations made here and perhaps even alter the conclusions. Alternative B, in which properties are directly purchased by the land bank, for example, could become more viable should such a funding source be identified. Thus, the final recommendation of the land bank study is that further investigation is needed to determine the overall feasibility of a land bank.

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# Appendices

## Appendix A: Key Acronyms

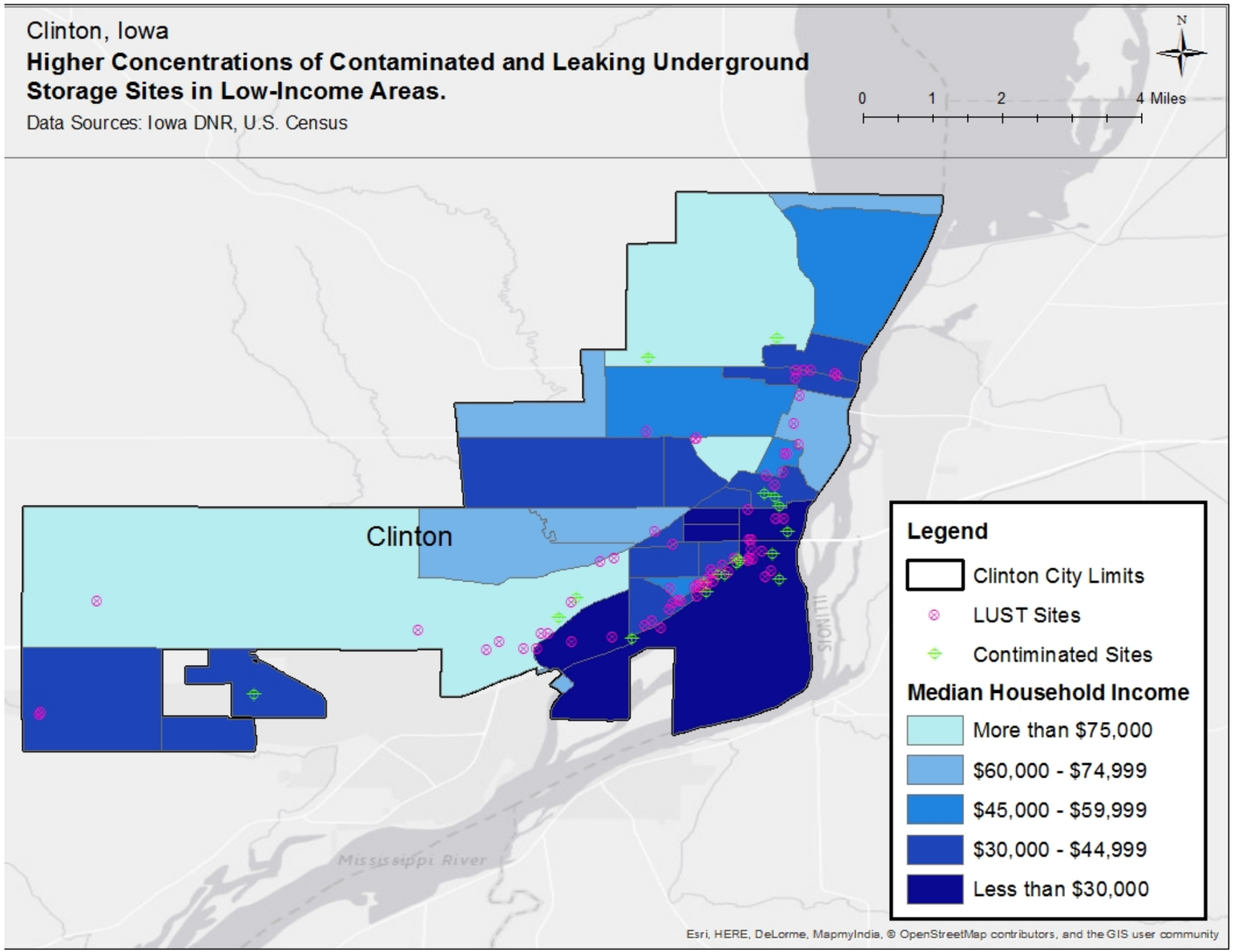
| | |
|---|---|
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act |
| CTBLB | Connecticut Brownfields Land Bank |
| DNR | Department of Natural Resources |
| ECIA | East Central Intergovernmental Association |
| ECDC | East Central Development Corporation |
| EPA | Environmental Protection Agency |
| ESA | Environmental Site Assessment |
| HUD | Housing and Urban Development |
| IEDA | Iowa Economic Development Authority |
| KSU BIT | Kansas State University Brownfield Inventory Toolkit |
| LRP | Land Recycling Program |
| LUST | Leaking Underground Storage Tank |
| NFA | No Further Acton |
| NPL | National Priority List |
| RCRA | Resource Conservation and Recovery Act |
| SCLBC | Suffolk County Landbank Corporation |
| SNAP | Special Needs Assistance Program |
| TIF | Tax Increment Financing |
| UCR | Uniform Crime Reporting |
| UST | Underground Storage Tank |

## Appendix B: Potential Health Impacts of Site Contamination

**Table 1.1: Potential Chemicals of Concern in Brownfields**

| Hazardous Substance | Chronic Exposure Concerns[i] |
|---|---|
| Benzene | · Defats the skin |
| | · May affect bone marrow and immune system |
| | · Carcinogenic |
| Trans-1, 2-dichloroethene | · Defats the skin |
| Cis-1, 2-dichloroethene | · May affect liver |
| Methylene chloride | · May cause dermatitis |
| | · May affect central nervous system and liver |
| | · Possibly carcinogenic |
| Methyl ethyl ketone | · Defats the skin |
| | · Possible toxic effects on reproduction |
| Toluene | · Defats the skin |
| | · May affect central nervous system |
| | · May enhance hearing damage |
| | · Possible toxicity to human reproduction and development |
| Trichloroethene | · May cause dermatitis |
| | · May affect central nervous system, resulting in memory loss |
| | · May affect liver and kidney |
| | · Possibly carcinogenic |
| Vinyl chloride | · Possible damage to liver, spleen, finger tissue and bones, and blood and peripheral blood vessels |
| | · Carcinogenic |
| Anthracene | · May cause dermatitis under the influence of UV light |
| Benzo(a)pyrene | · Carcinogenic |
| | · Causes heritable genetic damage |
| | · Toxicity to human reproduction and development |
| Bis (2-ethylhexyl) phthalate | · May affect testes |
| | · Possible toxicity to human reproduction and development |
| Naphthalene | · May affect blood, resulting in chronic haemolytic anaemia |
| | · May affect eyes, resulting in cataracts |
| | · Possibly carginogenic |
| Pyrene | · Chronic skin discoloration |
| PCBs | · May cause dermatitis, chloracne |
| | · May affect liver |
| | · Possible toxicity to human reproduction and development |
| Arsenic | · May cause dermatitis |
| | · May affect mucous membranes, skin, peripheral nervous system, liver and bone marrow, resulting in pigmentation disorders, hyperkeratosis, perforation of nasal septum, neuropathy, liver impairment, anemia |
| | · Carcinogenic |
| | · Possible toxicity to human reproduction and development |
| Chromium (III) compounds | · May cause skin sensitization |
| Lead | · May affect blood, bone marrow, central nervous system, peripheral nervous system and kidneys, resulting in anaemia, encephalopathy (e.g., convulsions), peripheral nerve disease, abdominal cramps and kidney impairment |
| | · Toxic to human reproduction and development |
| | · Probable carcinogen |
| Asbestos | · May affect lungs, resulting in pulmonary fibrosis and mesothelioma. |
| | · Carcinogenic |

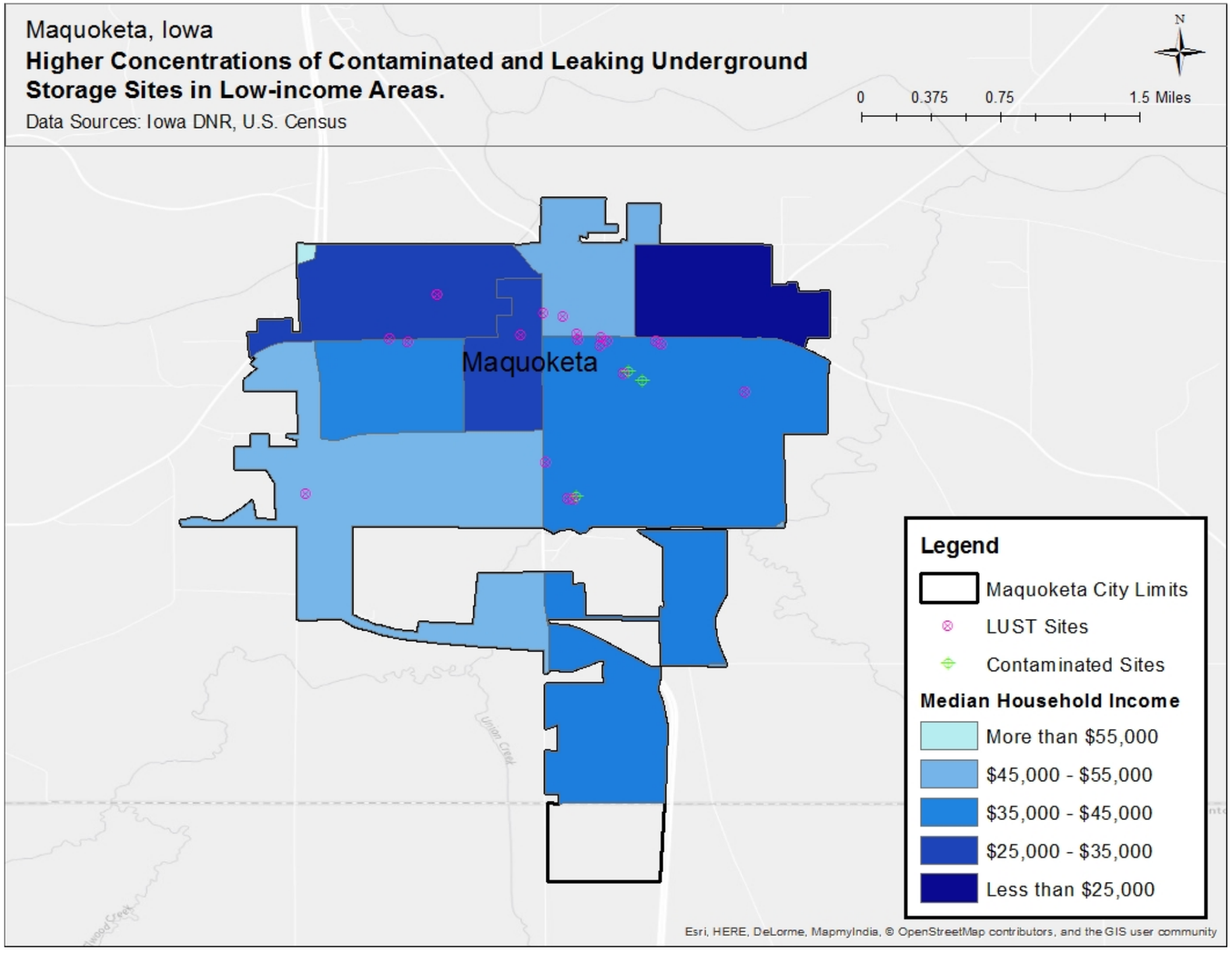
[i] National Institute for Occupational safety and Health. (n.d.). Interational chemical safety cards - effects of long term or repeated expofrome.


Clinton, Iowa
Higher Concentrations of Contaminated and Leaking Underground Storage Sites in Low-Income Areas.
Data Sources: Iowa DNR, U.S. Census
N
0
1
2
4 Miles
Clinton
Mississippi River
ILLINOIS
Legend
Clinton City Limits
LUST Sites
Contiminated Sites
Median Household Income
More than $75,000
$60,000 - $74,999
$45,000 - $59,999
$30,000 - $44,999
Less than $30,000
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

Maquoketa, Iowa

**Higher Concentrations of Contaminated and Leaking Underground Storage Sites in Low-income Areas.**

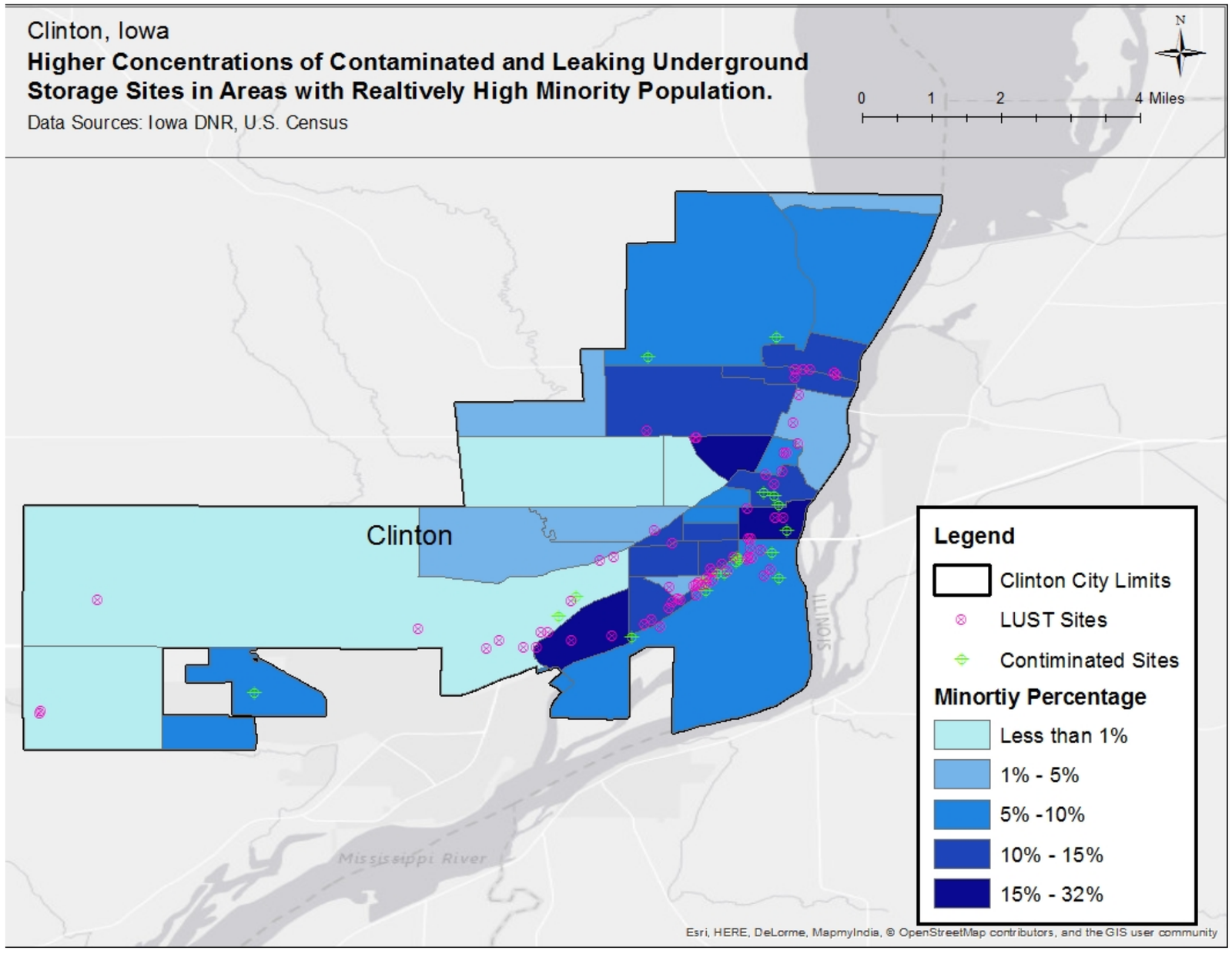
Data Sources: Iowa DNR, U.S. Census



Clinton, Iowa

**Higher Concentrations of Contaminated and Leaking Underground Storage Sites in Areas with Realtively High Minority Population.**

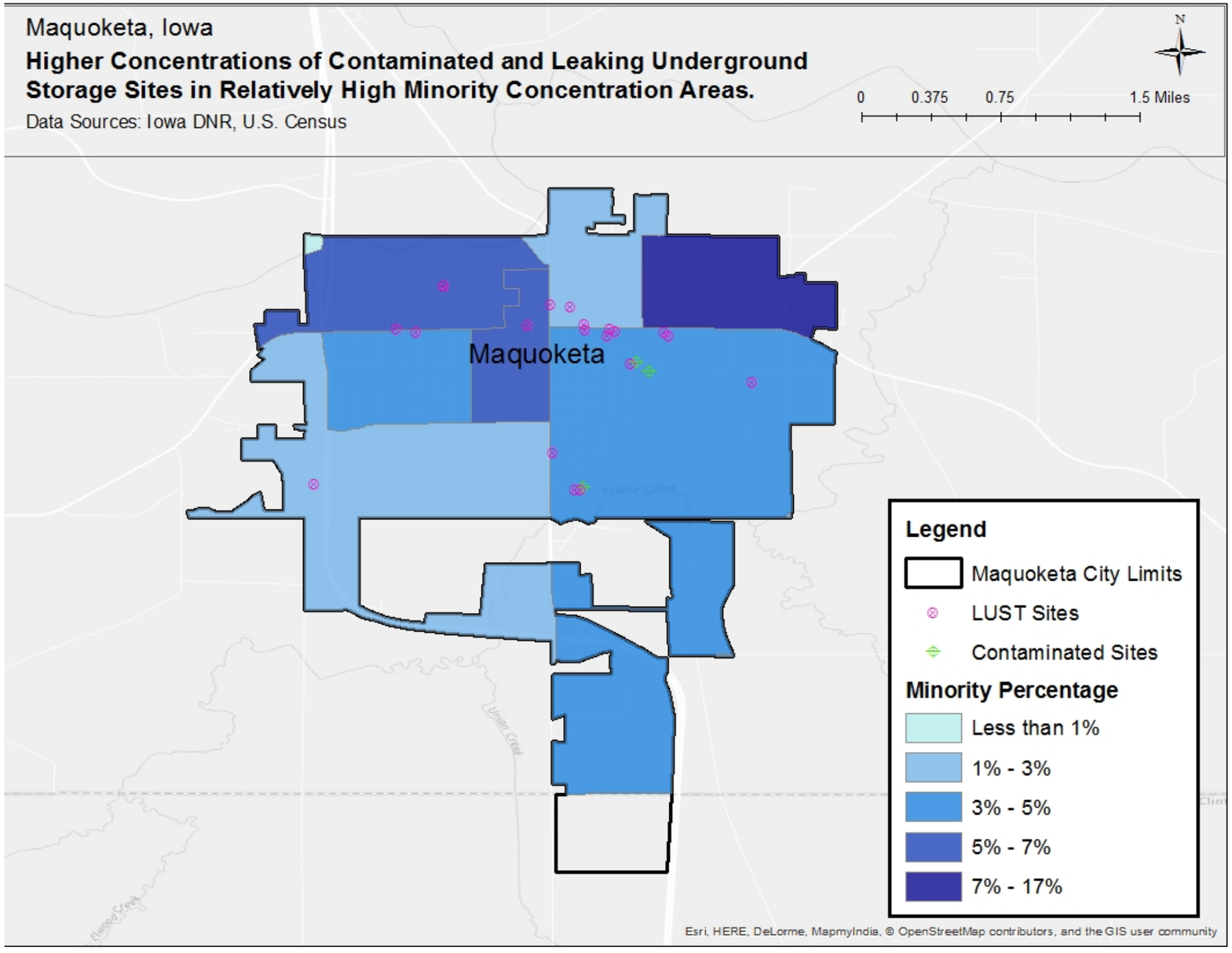
Data Sources: Iowa DNR, U.S. Census



Maquoketa, Iowa

**Higher Concentrations of Contaminated and Leaking Underground Storage Sites in Relatively High Minority Concentration Areas.**

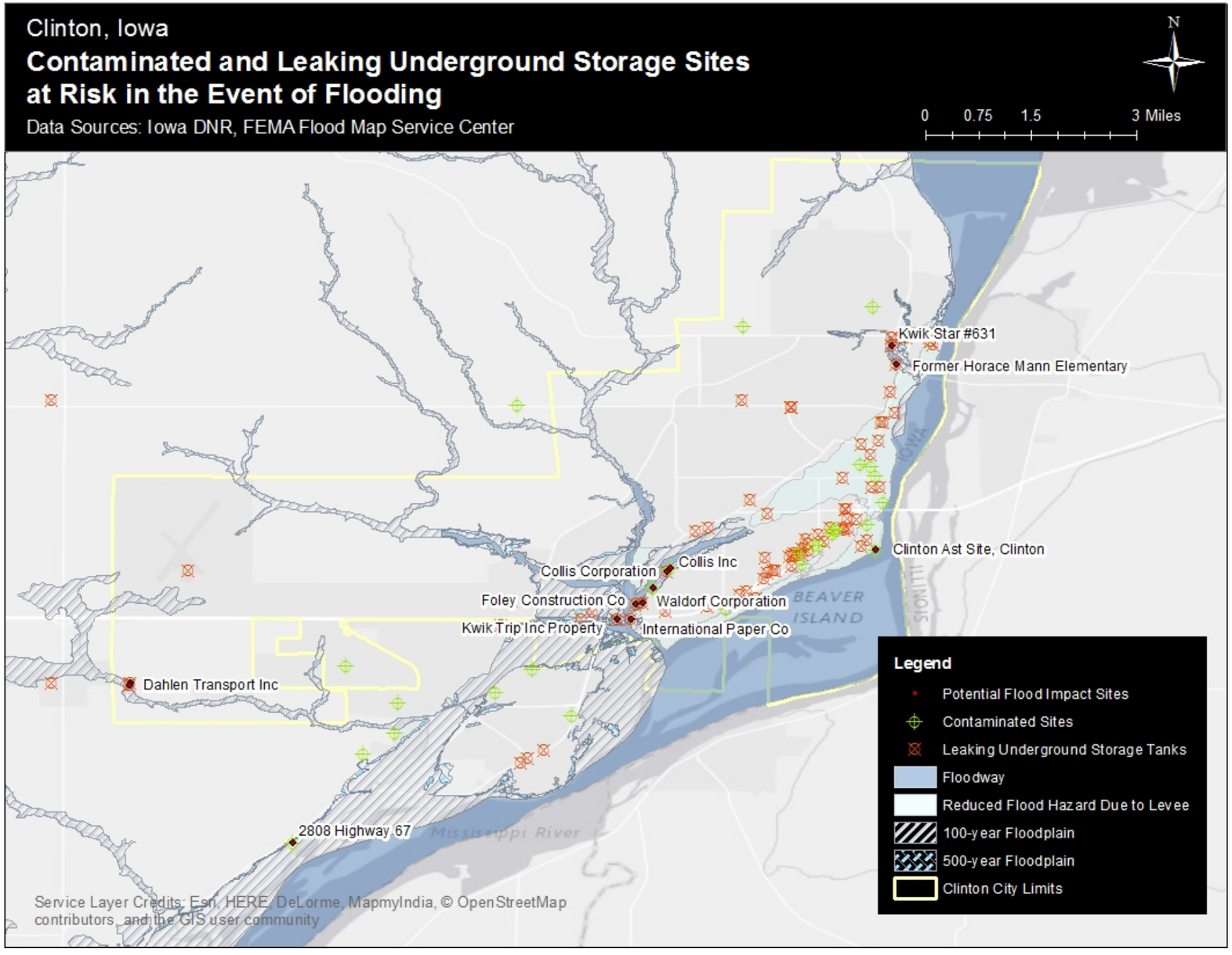
Data Sources: Iowa DNR, U.S. Census



Clinton, Iowa

**Contaminated and Leaking Underground Storage Sites at Risk in the Event of Flooding**

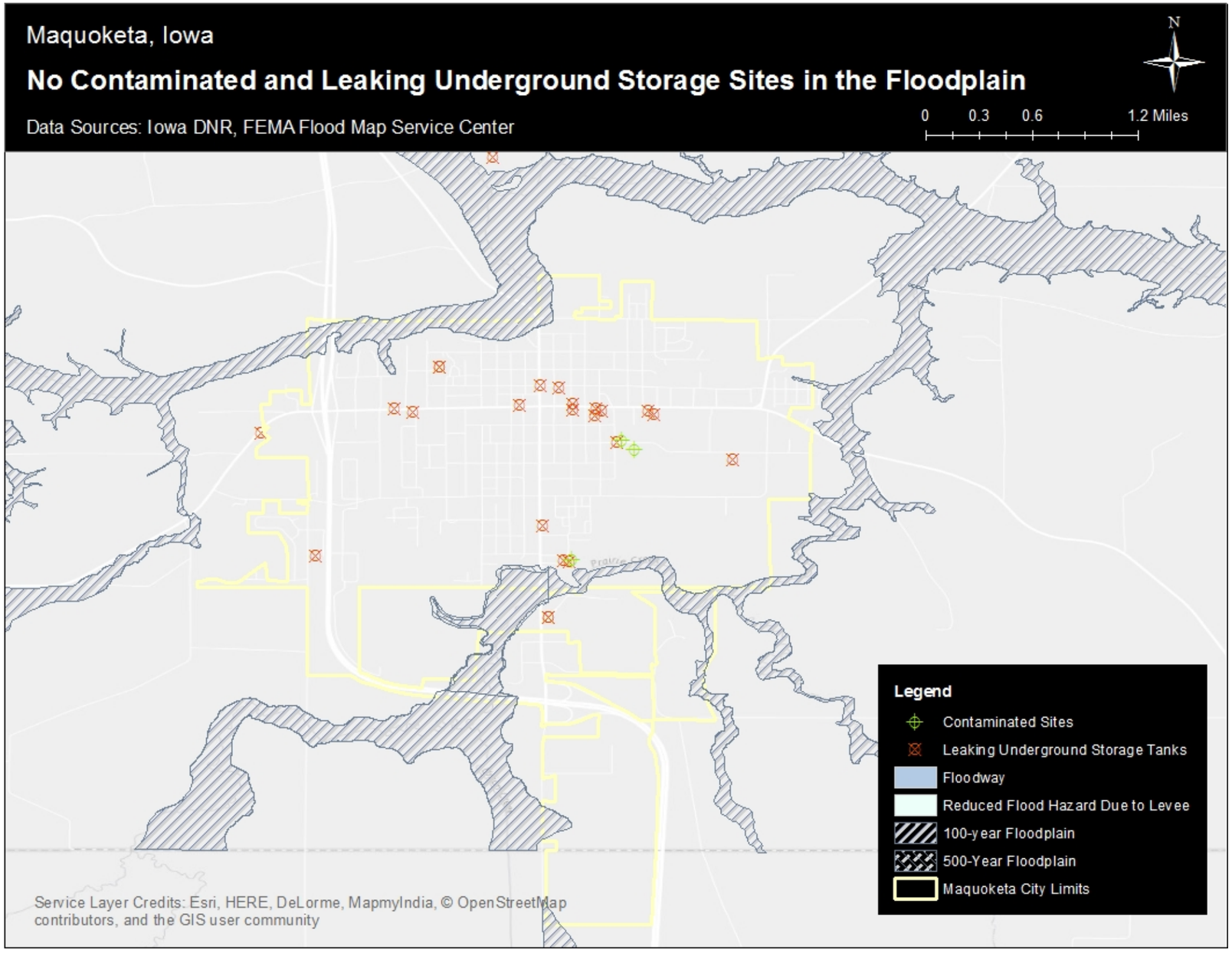
Data Sources: Iowa DNR, FEMA Flood Map Service Center



Maquoketa, Iowa

## No Contaminated and Leaking Underground Storage Sites in the Floodplain

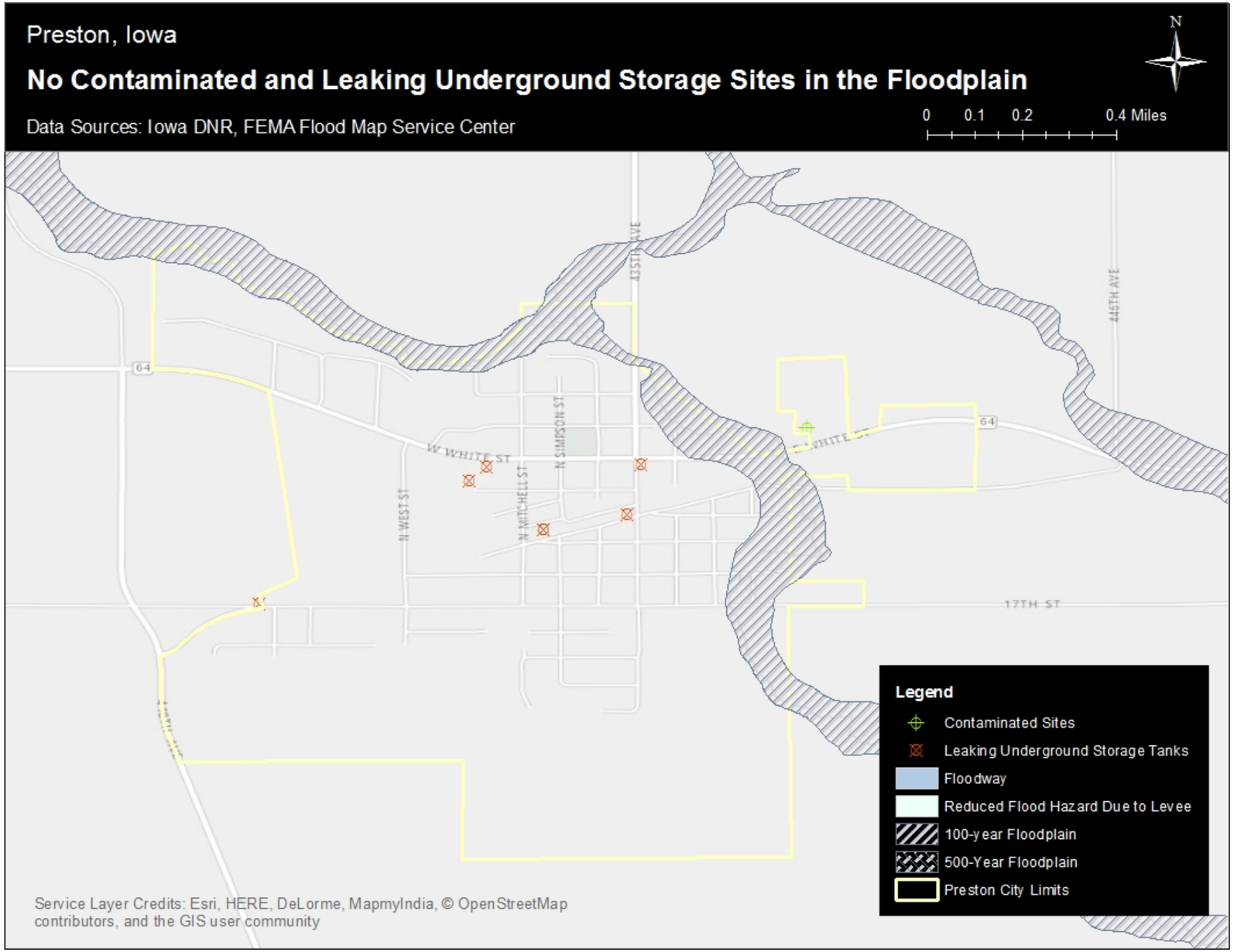
Data Sources: Iowa DNR, FEMA Flood Map Service Center



Preston, Iowa

## No Contaminated and Leaking Underground Storage Sites in the Floodplain

Data Sources: Iowa DNR, FEMA Flood Map Service Center



## Appendix D: Comparison Chart of Brownfield Inventories

| | | Type of testing needed | Consulting resources available | Municipality owned | Past uses | Current use | Current condition | Existing structures | Historic site | Impact on community | Current zoning | Existing redevelopment plans | Adjacent redevelopment | Conformity with surrounding use | Existing community brownfield plan | Prior testing history | Known contaminants | Measures taken to address contamination | Perceived health concerns | Other testing funds available | Prior testing fund sources | Known responsible party | Cost ratio of remediation to value | Parcel size | Flooding or soil compaction concerns | Crime rate | Community financial incentives (TIF, etc.) | Proximate transit | Proximate roadway access | Existing infrastructure | Latitude/Longitude coordinates or parcel ID | Superfund site or other federal jurisdiction | Petroleum liability | Additional documents required | Route of contaminant exposure | Surrounding demographic profile | Land Use or Deed Restriction | Tax lien on property | Date of last update for entry |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Priority | EPA | | | x | x | | x | x | | | | x | | | | x | x | | | x | x | | | | | | | | | | x | x | x | | | | | | |
| Criteria | ECIA | x | x | x | x | x | x | | | x | | x | | | | x | x | | | | | x | | | | | | | | | | | x | | | | | | |
| Potential Supplemental Fields | Delta Institute | | | x | | | x | x | | | | x | x | x | x | x | x | | | x | | | | x | x | x | | x | x | x | | | | | | | | | |
| | Wisconsin Assessment | | | x | x | x | x | | | | | | | | | x | x | | | | | x | | x | | | | | | | x | x | x | | | | | | |
| | Berkshire RPC | | | x | x | | | | | | x | | | | | | | | | | | | | x | | | | | | | | x | x | x | | | | | |
| | Pennsylvania Map Portal Inventory | | | | x | | x | x | | | | | | | | | | | | | | | | x | | | | | | | | | | | x | | | | x | |
| | New Jersey | | | x | x | x | x | x | | | x | | | | | x | x | | | | | x | | x | | | | | | x | | | | | | | | | x | |
| | Region 9 Target Brownfield Assessment | | | | x | x | | x | x | x | | | | | | | x | x | x | x | | x | | x | | | | | | | | | x | | x | | | | |
| | New Hampshire SW RPC | | | | x | x | x | x | | | | x | | | | x | x | | | | | | | x | | | | | | | | | x | | | | | | |
| | Broome County | x | | x | | x | x | x | | | x | | | | | | x | | | | | | | x | | | x | | x | x | | | | | x | x | | | |

A comparison of several different brownfield inventories reveals a high degree of variation in the types and amounts of information collected about each site. For the purposes of this project, those fields required by the EPA and previously recorded by ECIA have been deemed priority fields for the tiered ranking system. Additional fields found in other sources were sorted based on applicability to ECIA goals, and from these the following supplemental fields were selected to include in the Reuse Readiness inventory:

- adjacent redevelopment
- current conformity with surrounding uses
- community plan for brownfields
- parcel size
- flooding concerns
- site security/safety concerns
- existing infrastructure on site
- past use #2
- past use #3
- photos (submitted separately)

**IA Reuse Readiness Brownfields Inventory**

East Central Intergovernmental Association

| Mandatory Fields: Must be completed for each entry, no point value | |
|---|---|
| Site name | - |
| Site location | - |
| County<br>City<br>Address<br>Parcel ID<br>Parcel size | <br><br><br><br>- |
| Applicant contact information<br>Name<br>Address<br>Email<br>Phone | <br><br><br><br> |
| Type of services requested | - |
| Does the applicant own the property? | - |
| If no, will the owner consent to testing? | - |
| Is the property listed on the National Priorities (Superfund Site) List? | - |
| Is the property subject to unilateral adminstrative orders, court orders, or consent decrees related to CERCLA? | - |
| Is the property under the jurisdiction or control of the U.S. Government? | - |

| Priority Fields (Including Redevelopment Plan): 150 points total | |
|---|---|
| Is there a redevelopment plan for the property? | Yes (10 points)<br>No (0 points) |
| What type of future use is proposed for the property? | Industrial (5 points)<br>Commercial (5 points)<br>Mixed use (5 points)<br>Public facility (5 points)<br>Residential (5 points)<br>Green space (5 points) |
| Please describe the redevelopment plan | Please be as detailed as possible (15 additional points for completing this field) |
| Current use or zoning classification | Industrial (10 points)<br>Commercial (10 points)<br>Mixed use (8 points)<br>Public facility (6 points)<br>Residential (5 points) |
| Current condition of property | Buildings maintained (10 points)<br>Buildings unmaintained (10 points)<br>Vacant (5 points) |
| Please detail the condition of building(s) and lot | Please be as descriptive as possible (10 points for completing this field) |
| Is the property tax delinquent? | Yes (5 points)<br>No (5 points)<br>Unknown (5 points) |
| Category of prior use | Industrial (5 points)<br>Commercial (5 points)<br>Residential (5points)<br>Waste storage (5 points) |
| Please describe prior use | Please be as descriptive as possible (10 points for completing this field) |

| | |
|---|---|
| Concerns about/impact of site | Please elaborate as thoroughly as possible (15 points for completing this field) |
| Has any previous investigation(s) been completed at the site? | Yes (5 points)<br>Unknown (5 points)<br>No (5 points) |
| If yes, please indicate which types of assessments have been conducted. | Phase I ESA (0 additional points)<br>Phase II ESA (0 additional points)<br>Lead Testing (0 additional points)<br>Asbestos Testing (0 additional points)<br>Air Quality Testing (0 additional points) |
| If yes, did a previous investigation reveal a responsible party? | Yes (0 additional points)<br>Unknown (2 additional points)<br>No (5 additional points) |
| If yes, is the responsible party able to financially contribute to testing or cleanup? | Yes (0 additional points)<br>Unknown (2 points)<br>No (5 additional points) |
| Did the applicant cause or contribute to contamination, or transport waste to the site? | Yes (0 points)<br>No (10 points) |
| Did the current owner cause or contribute to contamination, or transport waste to the site? | Yes (0 points)<br>No (10 points)<br>Unknown (2 points) |
| Type of applicant<br>*If not a municipality or county, please provide local government contact who can confirm project support* | Municipality (10 points)<br>County (10 points)<br>Nonprofit (7 points)<br>28E Organization (7 points)<br>Area Development Corp. (7 points)<br>Economic Development Entity (7 points)<br>Private Entity (5 points) |
| If the property is municipally- or county-owned, how was it acquired? | Tax delinquency (5 points)<br>Bankruptcy (5 points)<br>Abandonment (5 points)<br>Direct purchase (5 points)<br>Eminent domain (5 points)<br>Donation (5 points)<br>Other (5 points) |
| If the property is owned by a private entity, how was it acquired? | Tax sale (5 points)<br>Direct purchase (5 points)<br>Donation/Gift (5 points)<br>Inheritance (5 points)<br>Other/Unknown (5 points) |
| Local government contact<br>Name<br>Organization<br>Title<br>Email<br>Phone number | (10 points total for completing all fields) |
| Current owner contact info (if not government owned)<br>Name<br>Address<br>City<br>State<br>Zip<br>Email<br>Phone number | - |

| **Supplemental Fields: 50 points total** | |
|---|---|
| Is the property located within a central business district? | Yes (5 points)<br>No (0 points) |
| What are the suspected contaminants? | **Unsure? Click on "Possible Contaminants" tab below for suggestions.**<br>(5 points for completing this field) |
| Please describe any flooding concerns for the site. | What is the source of flooding (overtopped creek, rainwater held on site, etc.)?<br>How often does flooding occur?<br>(5 points for completing this field) |
| Please describe any security or safety concerns for the site. | Crime, vandalism, trespassing, or other safety concerns?<br>(5 points for completing this field) |
| Is this site in a low-income or predominantly minority area? | Yes (5 points)<br>No (0 points) |
| If yes, please describe the area. | (5 additional points for completing providing a narrative) |
| Is there adjacent redevelopment planned or ongoing? | Yes (1 point)<br>No (0 points) |
| Please describe redevelopment plans for adjacent properties, if any. | (4 points for completing this field) |
| Please describe existing infrastructure on site. | Roads, water, utilities, etc.<br>(5 points) |
| Have you submitted photos of the site to BrownfieldsPhotos@ECIA.org? (Y/N) | Yes (5 points)<br>No (0 points) |
| Please provide contact information for the previous owner if known. | Name, current address, email, phone number<br>(5 points) |

# What is a brownfield?

Shuttered gas stations. Old commercial buildings. Salvage yards.

Brownfields can be anywhere: in big and small communities, on main streets and the outskirts of town, in small parcels and large, multi-acre sites.

Some of these locations are contaminated and require cleanup, while many more only need testing to demonstrate they are ready for reuse.

Left unaddressed, brownfields can have negative impacts on the surrounding area, inviting property crime, hindering economic development, and impacting public health.

**Basic brownfields definition**

The Environmental Protection Agency (EPA) defines brownfields as "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."

It does not have to be this way, though. Testing can clear the way for redevelopment. **ECIA recently won a grant from the EPA to assist with the cost of testing brownfield sites. Your site may qualify for this assistance.**

How do you know if a site is a brownfield? If the answer is "yes" to two key questions:

- Could the property be polluted or contain hazardous substances like petroleum spills, lead, asbestos, heavy metals or other chemical contaminants?
- Would that be a reason a potential buyer might choose not to redevelop or reuse the site?

**Many people equate brownfields with Superfund sites. In fact, less than 1% of contaminated sites are serious enough to require that level of remediation. Brownfields are far more common and require less intervention.**

## Knowing the history of a site can help identify potential contaminants

| Potential contaminants by past use | |
|---|---|
| *Automotive garages/ body shops* | • waste oils<br>• paints<br>• cleaners<br>• solvents<br>• scrap metals |
| *Dry cleaners* | • petroleum products<br>• chlorinated solvents |
| *Farmlands* | • pesticides<br>• arsenic<br>• copper |
| *Gasoline stations* | • petroleum products<br>• lead<br>• chlorinated solvents |
| *Manufacturing plants* | • petroleum products<br>• solvents<br>• metals<br>• PCBs |
| *Railroads/rail yards* | • PCBs<br>• petroleum products<br>• lead |
| *Salvage yards* | • petroleum products<br>• lead<br>• degreasers<br>• asbestos<br>• dioxin |

### Contact Us

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# What are Phase I and Phase II ESAs?

Potential contamination varies from site to site depending on past uses.

These can include sites that were formerly:

- Gas stations, body shops, or salvage yards
- Dry cleaners
- Railroads and rail yards
- Factories and industrial storage facilities
- Buildings that contain asbestos

Sometimes, simply the perception of contamination is enough to create a barrier to redevelopment. When that happens, a site is considered a brownfield.

Basic brownfields definition

The Environmental Protection Agency (EPA) defines brownfields as "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."

Two types of Environmental Site Assessments (ESAs) are available to determine the extent of contamination. In some cases, assessment reveals that a site does not pose a hazard and requires no remediation.

- **A Phase I ESA** can identify the likely presence and general types of suspected contamination. It is a non-intrusive process that involves visiting the site, conducting a records search, and speaking with those familiar with the site to identify areas of potential contamination or Recognized Environmental Conditions (RECs).
- **A Phase II ESA** is conducted if a Phase I test determines further investigation is needed. It involves taking soil and water samples to identify types and concentrations of contamination and areas that may require cleanup.

Phase I testing generally costs between $2,000 and $5,000.

Phase II testing generally costs between $10,000 and $80,000.

**ECIA recently won a grant from the EPA to cover the cost of these assessments. Your site may qualify.**

The owner of a site must give written consent before any assessments can occur.

Fears about contamination and liability for cleanup can prevent some owners from signing an access agreement.

However, Phase I and II ESAs have benefits for property owners:

- ESAs can increase the marketability of a site in the future. Most banks will require proof of a Phase I ESA prior to issuing a loan for purchasing a brownfield site.
- ESAs provide a clear understanding of what hazards may be on site and what is needed to eliminate or manage the issues. This can clarify and reduce risk for purchasers.

What happens if contamination is uncovered through site assessment?

The owners are responsible for the cleanup if they contributed to the contamination. Funding may be available to help property owners who did not cause the hazard.

Addressing hazards takes many forms.

In many cases, monitoring may be all that is required if contamination is found. In other cases, contaminated areas may be capped or future uses such as residential development may be restricted. In a very small percentage of cases, remediation may be required.

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# What funding resources are available?

There are many types of outside funding available to landowners, community members, and city officials who wish to clean up and redevelop their brownfields.

Public funding can take the form of low interest loans and incentives such as tax credits, and is based on the level of funding required, the scope of the assessment and cleanup, and the desired re-use of the property.

By using sources such as those listed on the back of this sheet, communities can have better access to capital in order to address their most pressing brownfields sites.

### Basic brownfields definition

The Environmental Protection Agency (EPA) defines brownfields as "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."

## How do we know which public funding source is right for the project?

In Iowa, there are two primary sources of funding for assessing and cleaning up brownfields: the Iowa Department of Natural Resources (IDNR) and the U.S. Environmental Protection Agency (EPA).

IDNR offers assessment assistance through their Brownfields Redevelopment Program. This assistance is tailored to single projects in communities that do not already have an EPA community-wide grant.

EPA grants are nationally competitive, but a better fit for communties that want to address multiple properties in a 3-year timeline. These EPA grants come in the form of assessment, cleanup, revolving loan funds, and area-wide planning grants.

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The University of Iowa School of Urban & Regional Planning

The University of Iowa IOWA INITIATIVE FOR SUSTAINABLE COMMUNITIES

## List of potential public funding sources

| Source | Agency | Maximum Amount | Description | Best Use | For More Information |
|---|---|---|---|---|---|
| Phase I and Phase II Environmental Assessment Funds | Iowa DNR | - | Funding to identify the presence, type and level of contamination | Single-site assessment prior to transfer of title | http://www.iowadnr.gov/Environmental-Protection/Land-Quality/Contaminated-Sites/Brownfields |
| Environmental Cleanup Funding | Iowa DNR | 50% of costs, up to $25,000 | Cost reimbursement for environmental cleanups | Single-site cleanup | http://www.iowadnr.gov/Environmental-Protection/Land-Quality/Contaminated-Sites/Brownfields |
| Brownfield Tax Credit Program | Iowa Economic Development Alliance (IEDA) | Tax credits of up to 24% of project costs | Assists with obtaining equity investment in brownfields redevelopment | Purchase and redevelopment of brownfield and grayfield sites | https://taxcredit.iowa.gov |
| Brownfield Phase I and Phase II Assessment Grants | EPA | Up to $200,000, $350,000, or $600,000 depending on grant type | Funds to assess properties as well as inventory work and remedial planning | Multiple sites, community area, or regional area | https://www.epa.gov/brownfields/types-brownfields-grant-funding |
| Brownfield Revolving Loan Fund (RLF) | EPA | $1,000,000, At least 50% must go to establish a local RLF | Capital to set up a revolving fund to make loans and some subgrants to conduct cleanup activities | For communities to set up a RLF to fund brownfield cleanup activities | https://www.epa.gov/brownfields/types-brownfields-grant-funding |
| Brownfield Cleanup Grants | EPA | $200,000 per site, with a three site limit | Funds to conduct cleanup at specific brownfields sites | Individual site(s) | https://www.epa.gov/brownfields/types-brownfields-grant-funding |
| Other local and area-wide options | Varies | Varies | Includes municipal financing, local TIF, USDA loans, HUD/CDBG funds, EDA grants, DOT funding, Histotic tax credits | Dependent on the redevelopment projects | Check with local, regional, and state organizations, as well as federal agencies. |

Though there are many options for public funding available, these are only one piece of a larger puzzle. Public funding is particularly important for forming the initial investment for a redevelopment project. This initial investment acts as "seed capital" that may attract private sector investment into a project.

# What are the steps to brownfield cleanup?

When a property has suspected contamination, the process for site assessment, cleanup, and eventual reuse of the site can seem daunting, in part because funding opportunities can hinge on whether the process is done in the proper order.

The Iowa Department of Natural Resources (IDNR) has established a basic order of events for the evaluation and redevelopment of brownfields sites.

These steps are required for the Iowa Land Recycling Program eligibility and mirror federal requirements.

### Basic brownfields definition

The Environmental Protection Agency (EPA) defines brownfields as "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."

## Redevelopment Timeline

| | | |
|---|---|---|
| 1 | Phase I Environmental Site Assessment (ESA) | This involves a non-intrusive review of a site's history and environmental records, as well as a site visit to determine if assessment for specific contaminants is necessary. |
| 2 | Phase II Environmental Site Assessment (ESA) | Phase II ESAs involve sampling soil and groundwater to test for the presence and/or level of contamination on the site and are done based on Phase I results. |
| 3 | Site Acquisition | A Phase I should be completed prior to taking title to a brownfield. Acquisition may then occur via donation, purchase, resolution of liens, or tax foreclosure (for abandoned properties). |
| 4 | Environmental Cleanup | The developing party must own property and have completed assessments. Enrollment in Iowa DNR's Land Recycling Program is encouraged. |
| 5 | Redevelopment | It is at the community's discretion to determine the next best use for a reuse ready brownfield site. Redevelopment can be privately or community funded. **However, reuse potential for a site should be identified prior to conducting the Phase I ESA.** |

## Redevelopment scenarios

Who should be in charge of a brownfields redevelopment project? How should funding be handled? The answers to these questions depend on the approach taken to redevelopment, which generally follows one of three models.

*Private Redevelopment:* A developer takes responsibility for the entire redevelopment project, and conducts Phase I and Phase II assessments as appropriate. The developer completes the cleanup activities, meeting the requirements of the Iowa Land Recycling Program.

*Public-Private Redevelopment:* A community and redeveloper form a partnership and combine their resources to accomplish the redevelopment. Level of involvement varies, but often a public entity will sponsor the project and find initial funding for assessment. A private-sector developer will then fund and manage pre-development and construction.

*Public Redevelopment:* Communities take responsibility for the entire assessment and cleanup process, then may sell the property to a developer or choose to keep the property post-cleanup for public use.

## Additional Resources

### Iowa DNR

This timeline is a simplified outline of steps as required by the Iowa DNR's Land Recycling Program. For more information regarding the program: Iowa LRP

### EPA Brownfields Redevelopment

Outside of assessment, cleanup, and acquisition, there are steps to real estate development that can occur before or after testing and cleanup. For more information on redevelopment planning post cleanup refer to EPA's Brownfields Redevelopment Documents: EPA Brownfields Redevelopment Planning

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THE UNIVERSITY OF IOWA

# BROWNFIELDS REDEVELOPMENT INTERVIEW

*East Central Intergovernmental Association, East Central Iowa Brownfields Coalition*

Hello,

My name is _____. I am a student with the University of Iowa, partnered with the Iowa Initiative for Sustainable Communities and the East Central Intergovernmental Association. We are researching brownfield redevelopment in Clinton and Jackson Counties. May I ask you a few brief questions about your experiences as a (developer/commercial realtor/builder) in Eastern Iowa? I have a few questions that should only take 10 minutes. Your responses will aid us in the development of a regional brownfields inventory to assist the region in securing redevelopment funds. Your responses will also help us to understand brownfields redevelopment in the region and how ECIA and municipalities can address your needs with a regional brownfields program.

THE UNIVERSITY OF IOWA IOWA INITIATIVE FOR SUSTAINABLE COMMUNITIES

THE UNIVERSITY OF IOWA School of Urban & Regional Planning

**Preliminary**

*How would you classify your business operations?*

☐ Commercial Development ☐ Residential Development ☐ General Contractor

☐ Construction ☐ Real Estate ☐ Commercial Real Estate

*How many full-time or equivalent staff do you have?* _____

*How long has your company been active in the area?* _____

*How would you characterize the current conditions in the real estate area?* _____

*Do you see these conditions changing, or do you feel this a long term trend?* _____

*Which of these best describes the structure of your company?*

☐ Sole entity ☐ Multiple locations within the region ☐ Affiliate of a parent company

*What is the primary market area of your company?*

☐ Clinton County ☐ Jackson County ☐ Multiple Counties ☐ Across the State

☐ Multiple States ☐ Other _____

**Question 1.** The EPA defines brownfields as property for which redevelopment or reuse may be complicated by the potential presence of a hazardous substance or contaminant. In your professional experience, *how many brownfield sites are you aware of Clinton and Jackson counties?*

_____ sites

**Question 2.** Do you have any prior experience with redeveloping or marketing sites that had or were believed to have environmental contamination?

☐ If Yes...

Go to Question 3

☐ If No...

Elaborate?

Go to Question 4 (skip Question 3)

**Question 3.** In the last ten years, how many properties have you redeveloped in which there were issues of potential legal liabilities related to contamination? ___

Are there any particular cases that you can elaborate on?

**Question 4.** Currently, Iowa Economic Development Authority offers a tax credit of up to 24% of qualifying costs (capped at $1 million per project per fiscal year) for brownfields redevelopment. Are you aware of this incentive?

☐ If yes...

Have you applied for it in connection with any properties you've redeveloped?

Can you tell us about the project?

☐ If no...

Would such an incentive be a reason to consider redeveloping a brownfield site? Why not?

Would you have any in mind?

**Question 5.** Our final question deals with possible deterrents to brownfields redevelopment. As I read each one, can you tell us if you think these are a major deterrent, minor deterrent, or not a deterrent? You are welcome to elaborate.

_ Cost of Demolition

_ Cost of Remediation

_ No Market Demand Post Redevelopment

_ Lack of Potential Investors

_ Uncertainty of Liability

_ Lack of Private Loan or Financing Options

_ Lack of State and Local Financial Incentives

_ Preference toward New Development

_ Lack of Existing Infrastructure

## Getting to the Code

The toolkit it written in VBA (Visual Basic for Applications) – a scripting language geared specifically to Microsoft Office's suite of products, including Excel, Word, and Access. This toolkit makes use only of Excel and Word, though future integration by an interested party is feasible. Listed below are the sequential steps to accessing the developer console through which the code is accessed.

1. Launch Excel and open the IA Reuse Readiness Toolkit
2. Press Alt + F11
   a. Alternatively, one can access the developer console by enabling the Developer tab. To do this, click File on the top-left of the screen, and choose Options (found at the bottom of the list of the left-hand side of the screen). Next, click Customize Ribbon, and then check the Developer checkbox on the right-hand side of the Customize Ribbon box. Once this box is checked, a new tab header titled "Developer" should appear along the top of Excel. Click View Code to access the Developer Console and view the toolkit's code

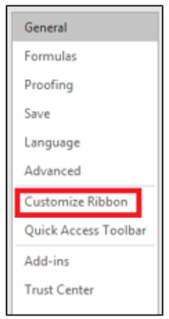


*Figure 2: After choosing File > Options, click the Customize Ribbon button in Options*

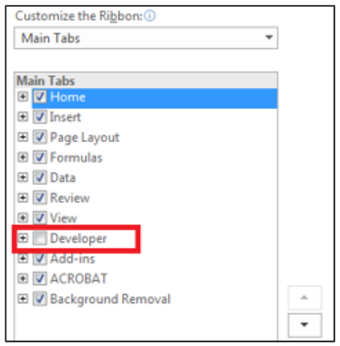


*Figure 1: After clicking Customize Ribbon, check the box next to Developer*

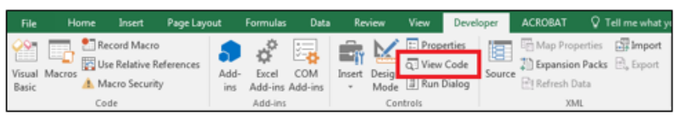


*Figure 3: The Developer tab is now enabled, and code can be viewed by clicking View Code*

```
Private Sub ApplicantTypeScore()

'This sub scores the Applicant Type dropdown field.
'This sub inspects the numeric position (0 being the first response) of a response
'in a list and determines the field's score from that.

    Dim index As Integer
    index = ApplicantType.ListIndex
    Dim colNum As Integer
    colNum = 37

    Select Case index
        Case Is = 0, 1
            targetCell.Offset(0, colNum).Value = 10 'Municipality or County
        Case 2 To 5
            targetCell.Offset(0, colNum).Value = 7 'Nonprofit, 28E Org, Area Dev. Corp.
        Case Is = 6
            targetCell.Offset(0, colNum).Value = 5 'Private Entity

End Select

End Sub
```

*Figure 6: A score sub that evaluates a dropdown field*

This is the second type of scoring function one will find in the toolkit. Certain features return – `colNum` features once again, as highlighted in the green box. However, now there appears a second variable – `index`. This new variable is set equal to `ApplicantType.ListIndex`. What exactly does this mean? `ApplicantType` is the name assigned to the field on the Data Entry form where a user chooses whether they are a Municipality, Nonprofit, 28E, etc. These responses are stored in a `list`, which is exactly like a list one takes to the grocery store, except this list is used by Excel to know what information it needs to load into the dropdown menu for the Applicant Type field on the Data Entry user form.

`.ListIndex` refers to the numeric position of a response in a list. A caveat to note – VBA, like most programming languages, begins counting at zero – so the first response in a list is actually 0, not 1. So, ApplicantType.ListIndex is equal to the numeric position (starting at 0!) of the user chosen response. If the user chooses the first option in the `ApplicantType` list, `index` (which, remember, is set to equal to the numeric position of the `ApplicantType` list), `index = 0`. Here is where the code outlined with a red box comes into play – `Select Case index` tells Excel to compare the value of `index` (which was set by the user choosing a response in the Applicant Type dropdown menu) to the code that follows. If the case is 0 or 1 (indicating a Municipality or County response by the user), the Applicant Type score column (defined by `colNum`) is assigned a score of 10. If the user's chosen response is Nonprofit, 28E Org., Area Development Corp., or Economic Development Entity, `index` will equal 2, 3, 4, or 5. If the chosen response was Private Entity, `index` will equal 6.

In short, the code in the red box would read in plain English as "We will be inspecting the case (in this instance the numeric position of a response in a predefined list) of `index`. If the case is equal to the first two responses in the `ApplicantType` dropdown, give the cell on this row and 37 columns to the right a score of 10. If the chosen response's numeric position falls on or between the second and fifth responses, give the cell on this row and 37 columns to the right a score of 7. If the chosen response is the last option, give the cell on this row and 37 columns to the right a score of 5."

## Appendix I: Comparative Strengths and Weaknesses of Four Alternative Land Bank Structures

**Alternative A: Land Bank as County Gift Recipient**

The county passes an ordinance establishing a process for gifting county-owned brownfields to a Land Bank as serving a public purpose. Cities gift brownfield properties to the county, and counties gift properties to the Land Bank, which is then responsible for testing, cleanup, and resale of the property.

| Strengths | Weaknesses |
|---|---|
| • Operating structure most closely resembles other land banks in that city/county and Land Bank goals are aligned and properties are gifted to the Land Bank<br>• Land Bank does not need to acquire funds to purchase sites<br>• As a nonprofit, Land Bank can apply for EPA cleanup funds to be used on properties it owns<br>• Land Bank can use the proceeds from selling properties to fund future testing and cleanup activities<br>• Land Bank has full control over the property and can convey property to developers in accordance with pre-established priorities (economic development, public amenities, etc.) once testing and cleanup is completed | • Passing of the ordinance will require a public process; the time required initially will delay the launch of the Land Bank<br>• Politically uncertain in terms of county administration and public buy-in<br>• Administratively complex as cities pass properties to the county to be passed on to the Land Bank; may be simpler for counties to acquire properties directly<br>• Cities/counties may need to undertake Phase I testing for properties it purchases (though ECIA could direct EPA grant funding to these sites) |

**Alternative B: Land Bank as Direct Purchaser**

The Land Bank uses its funds to acquire brownfield properties, either by bidding on liens at tax sales (that are then converted into a deed) or by directly purchasing the site from the current owner. The Land Bank undertakes testing and cleanup and then sells the property to a suitable owner.

| Strengths | Weaknesses |
|---|---|
| • Land Bank has full control over the property to undertake any necessary testing and cleanup<br>• Land Bank can operate on a timeline independent of deadlines set by the city or county<br>• Land Bank is free to determine suitable future uses and can retain the property until such time as a compatible purchaser is identified<br>• Land Bank can retain the profits from the sale and use them to fund future purchases<br>• Alleviates cities/counties of liability for brownfield sites<br>• Land Bank has full discretion to choose sites according to its priorities<br>• As a nonprofit, Land Bank can apply for EPA cleanup funds to be used on properties it owns | • An initial source of funding must be identified to finance Land Bank purchases<br>• Land Bank must outbid other potential purchasers<br>• When purchases involve tax certificates, the process to transfer the certificate to a deed is lengthy and will delay testing/cleanup<br>• If sales price is less than purchase price and testing and cleanup costs, Land Bank may quickly become financially infeasible; as a result, program will need to be highly restrictive/targeted in its real estate purchases and may not address sites most in need of remediation<br>• Will likely require many years of small, singular purchases/projects before the Land Bank will have sufficient funds to tackle multiple projects |

**Alternative C: Land Bank as Property Manager**

The city or county acquires brownfield sites and contracts with the Land Bank to manage properties. In this role, the Land Bank undertakes testing and cleanup, while the government entity retains ownership of the property and is responsible for selling the site.

| Strengths | Weaknesses |
|---|---|
| • Land Bank does not need to acquire funds to purchase sites<br>• Land Bank may choose not to manage a particular site if it does not align with the Land Bank mission/objectives<br>• Potentially simply administratively; fewer sales transactions since city or county retains title the property | • Cities/counties will need to undertake Phase I site assessments on its own for properties it acquires (though ECIA could direct EPA grant funding to these sites)<br>• Does not alleviate cities/counties of liability for sites – if contamination is found, the government entity will remain liable for the cleanup even if the Land Bank is the one to oversee it<br>• If the cleanup exceeds the Land Bank's financial resources, the city/county will be forced to complete the project<br>• Property sales will not support the Land Bank activities, requiring an ongoing infusion of other funds to support Land Bank activities – cities/counties may need to pay for these services, and may not be able/willing to do so |

| | (Alternative C Weaknesses, cont.) |
|---|---|
| | • Changes in city administration may stymie efforts to move forward on projects<br>• If a willing buyer comes forward, city/county may choose to dispose of the property ahead of project completion or in a manner contrary to the goals of the Land Bank<br>• Land Bank cannot apply EPA cleanup funds to property it does not own<br>• Cities may not be able to acquire properties within a timeframe that allows grant money secured by ECIA to be disbursed<br>• If cleanup costs due to liability occur, taxpayer money will be diverted from other activities, likely to the detriment of other taxpayer-funded activities |

**Alternative D: Land Bank as County Lessee**

The city or county acquires brownfield sites and the Land Bank leases them in order to undertake testing and cleanup. The lease is renewed at the end of three years for properties where cleanup has not been completed. The city or county is responsible for selling the property.

| Strengths | Weaknesses |
|---|---|
| • Land Bank does not need to acquire funds to purchase sites, though it may need funds to lease sites<br>• Land Bank may choose not to manage a particular site if it does not align with the Land Bank mission/objectives<br>• Unlike Alternative C, does not require passing an ordinance, so it is somewhat politically/administratively more simple, though leasing agreements will require resolutions to be passes for each property | • Cities/counties will need to undertake Phase I site assessments on its own for properties it acquires (though ECIA could direct EPA grant funding to these sites)<br>• Does not alleviate cities/counties of liability for sites – if contamination is found, the government entity will remain liable for the cleanup even if the Land Bank is the one to oversee it<br>• If the cleanup exceeds the Land Bank's financial resources, the city/county will be forced to complete the project<br>• Property sales will not support the Land Bank activities, requiring an ongoing infusion of other funds to support Land Bank activities – as a lessee, it's unclear if Land Bank could charge city/county for its services<br>• |

| | |
|---|---|
| | (Alternative D Weaknesses, cont.)<br>• Leases will need to be carefully negotiated with city/county to be low cost and responsibilities of each party for the site clearly articulated; may require separate negotiations for each property<br>• Changes in city administration may stymie efforts to move forward on projects<br>• If a willing buyer comes forward, city/county may choose to dispose of the property ahead of project completion or in a manner contrary to the goals of the Land Bank<br>• Land Bank cannot apply EPA cleanup funds to property it does not own |

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