

## **Community Transformation through Brownfields Redevelopment**

### ***A White Paper by the Center for Creative Land Recycling***

Reclaim. Connect. Transform.

Those words define our work at the Center for Creative Land Recycling (CCLR).

Vacant or contaminated land may not feel or look like a community asset waiting to happen, but with the right knowledge, skills, vision and investment, these properties offer local governments and neighborhoods some of the best opportunities to transform their economies and their futures. The purpose of this white paper is to explain why brownfields redevelopment matters for local communities across the U.S., and to provide a brief introduction to the brownfields redevelopment process. This paper is intended for elected officials, local and state governments, civic leaders, non-profits, neighborhood associations, and other stakeholders with an interest in learning more about brownfields revitalization and what is necessary to make it successful.

### **About CCLR**

We convene, consult and collaborate with communities, government agencies, and the private sector to encourage them to undertake projects and ensure that those projects develop in ways that reduce inequities and increase community wellbeing. Over the next 20 years, we will repurpose thousands of underutilized properties across America in an intentional manner that reduces inequalities, increases environmental, physical and economic well being and mitigate climate change by reducing contaminants in our environment.

This approach to land recycling will create:

- Housing, parks, and space for new businesses
- Hundreds of thousands of new jobs
- Billions in new tax revenue

If successful, we will achieve the following impacts:

- More Communities will undertake and complete land-recycling projects and will assist other communities who undertake similar projects.
- More Governments will understand the importance of repurposing underutilized properties and will support repurposing projects.
- More Businesses will partner with communities by being active participants in repurposing underutilized properties.

### **Defining Brownfields and Land Recycling**

Land recycling is the reuse and redevelopment of any property deemed abandoned, vacant or underused. Brownfields redevelopment is a subset of land recycling and involves the reuse and redevelopment of contaminated land. The U.S. EPA defines a brownfield 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.”<sup>1</sup> The words “potential presence” are key. In fact, many brownfields are not contaminated, but suspicion of contamination stifles a site’s redevelopment potential. Brownfields are therefore sites that are sufficiently complex or risky for their redevelopment to require a concerted effort on the part of the local government, private sector and community – usually including public funding, a solid vision and plan, and strong public support.

While redeveloping brownfields can transform communities, left to idle, brownfields pollute soil, water and air and threaten public health and economic vitality. At best they contribute little or nothing to local coffers, and at worst their maintenance drains local tax dollars that could be used to support social services and other community needs.

While problematic, brownfields sites have several factors going for them:

- They’re often connected to existing infrastructure, such as roads, sewers and electricity;<sup>2</sup>
- They are frequently closer to existing neighborhoods and transit than undeveloped sites;
- Their reuse helps avoid sprawl by using existing land more strategically;<sup>3</sup>
- They may have historic buildings with “good bones” that can be preserved, helping maintain a neighborhood’s local fabric.

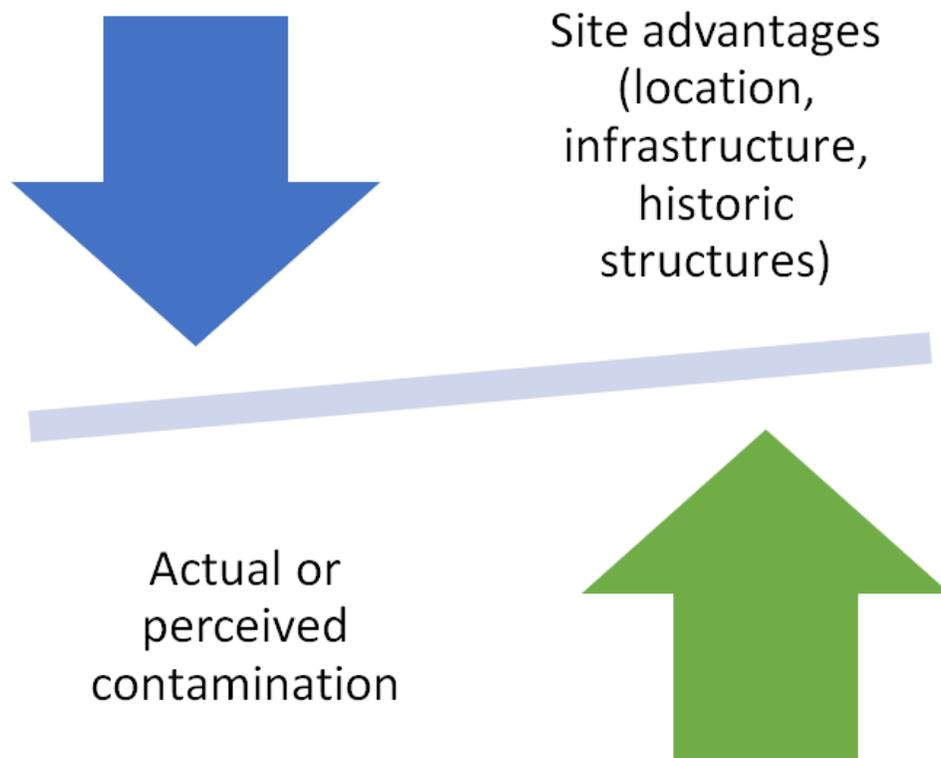
These factors make brownfields properties attractive for redevelopment, while actual or perceived contamination makes them less attractive. When contamination drags down a property’s value and overwhelms any advantages conveyed by location, connectivity or existing structures, a property is said to be “upside down.” A coordinated public, private and community vision and response, underscored by strong partnerships, can flip this equation and make redevelopment feasible.

---

<sup>1</sup> U.S. EPA, “Overview of the Brownfields Program,” <https://www.epa.gov/brownfields/overview-brownfields-program>, accessed June 2017.

<sup>2</sup> Evans Paull, Northeast-Midwest Institute, “The Environmental and Economic Impacts of Brownfields Redevelopment, a Working Draft,” July, 2008.

<sup>3</sup> U.S. EPA, “Air and Water Quality Impacts of Brownfields Redevelopment,” October 2011.



### Estimated Impact of Brownfields

Our communities have seen their share of economic shifts, from agriculture to manufacturing and now to a service economy driven by knowledge and information. In the process of economic transition, many communities have suffered from economic disinvestment as factories closed and industries left behind environmental contamination. Any future economic growth has to account for this contamination and make previously used land safe for reuse. In short, a sustainable and successful economic growth strategy must address the need for brownfields redevelopment.

There is no widely accepted estimate for the number of brownfields in the United States. Based on its contaminated sites databases, EPA estimates that there are 450,000 brownfields in the country, but [recent estimates have also been as high as 2 million](#). These numbers exclude properties that do not appear on Federal or state registries, and therefore underestimate the true extent of blighted sites. Encompassing old gas stations and dry cleaners, former rail yards and rail ways, abandoned mines and industrial sites, auto repair facilities, landfills and vacant lots, brownfields are everywhere. [According to EPA's conservative estimates given in testimony before Congress in 2016](#), 33% of the American population, including 35% of children under age five, live within three miles of a brownfield that received EPA assessment or cleanup funds. From the inception of the EPA Brownfields Program in the mid-1990s to 2016, only about 25,000 sites have received EPA funding, so the extent to which

brownfields impact the American population is almost surely greater.<sup>4</sup> One thing is for sure: brownfields are not a special interest issue: they are an issue everywhere.

### **Brownfields redevelopment: a powerful investment in our shared future.**

Under the best of conditions, real estate is a risky business. Brownfields' more central location and cost of cleanup tend to make this land more expensive than previously undeveloped land, also known as greenfields (i.e. agricultural land or open space). Site investigation, planning for and conducting cleanup adds a layer of risk and uncertainty, as the process requires working with state and sometimes local or federal regulatory agencies, which takes time and can increase costs. Environmental liability is another concern common to brownfields redevelopment -- this encompasses questions of who is ultimately responsible for the cost of cleanup, and for ensuring the cleanup is done correctly and that any maintenance occurs as scheduled, sometimes into perpetuity.

These considerations show why it is frequently easier and cheaper to build on a greenfield. Greenfields lack underground storage tanks that need to be removed, and they have no mysterious spills to be investigated and addressed. They do, however, come with their own major costs, many of them borne by the community as a whole. For example, because greenfields are often unconnected to existing infrastructure and are farther from existing neighborhoods, they require roads for access and generate traffic and greenhouse gas emissions.

As a society, our land use challenge for the 21<sup>st</sup> century is to level the playing field between greenfields and brownfields. Brownfields redevelopment isn't just a good thing to do – it is *the* thing to do. Building cities for the future requires that we continue to prioritize land reuse. Consider that:

- Compared to sprawl, brownfields redevelopment projects **lower vehicles miles traveled** and greenhouse gas emissions by 32 to 57 percent.<sup>5</sup>
- Brownfields cleanup can **increase property values** in surrounding areas by up to 5 to 15.2% for properties that are up to ¾ miles from a remediated site.<sup>6</sup>
- EPA estimates that **every one acre of redeveloped brownfield saves 4.5 acres of** habitat, forest, or agricultural land.<sup>7</sup>
- Relative to greenfield development, brownfield redevelopment **produces an estimated 47 to 62% reduction in stormwater runoff.**<sup>8</sup>

The U.S. EPA's brownfields program and the grants it provides have leveraged \$16.11 in funding from other sources for every \$1 of EPA funding.<sup>9</sup> Across eight diverse studies, public investments in brownfield redevelopment are estimated to leverage \$8 in investment for every \$1 of public

---

<sup>4</sup> Juliet Eilperin and Brady Dennis, "White House eyes plan to cut EPA staff by one-fifth, eliminating key programs," March 1, 2017. [https://www.washingtonpost.com/news/energy-environment/wp/2017/03/01/white-house-proposes-cutting-epa-staff-by-one-fifth-eliminating-key-programs/?utm\\_term=.a71734a12cb6](https://www.washingtonpost.com/news/energy-environment/wp/2017/03/01/white-house-proposes-cutting-epa-staff-by-one-fifth-eliminating-key-programs/?utm_term=.a71734a12cb6).

<sup>5</sup> U.S. EPA, "Air and Water Quality Impacts of Brownfields Redevelopment," October 2011.

<sup>6</sup> Evans Paull, Northeast-Midwest Institute, "The Environmental and Economic Impacts of Brownfields Redevelopment, a Working Draft," July, 2008.; U.S. EPA, "Brownfields Program Accomplishments and Benefits," <https://www.epa.gov/brownfields/brownfields-program-accomplishments-and-benefits>, accessed July 2017.

<sup>7</sup> Ibid.

<sup>8</sup> U.S. EPA, op cit.

<sup>9</sup> Evans Paull and U.S. EPA, op cit.

investment.<sup>10</sup> Brownfields redevelopment has historically been a bipartisan issue, because there is something in it for everyone:

- Jobs, economic development and increased local tax revenues
- Reduced infrastructure costs and more strategic investments in infrastructure upgrades and reuse
- Protecting public and environmental health
  - Protecting the quality of soil and water through direct cleanup and redevelopment
  - Protecting air quality by providing an alternative to sprawl that requires more driving to get anywhere
- Enhancing natural environments by creating and improving habitat.

### **How have other communities redeveloped brownfields?**

Successful brownfields redevelopment requires several key ingredients:

- A vision with community support
- Strong and ongoing community engagement
- A local champion to drive the process
- Strong partnerships
- Creative funding, including public and private sources.

Partnerships are particularly critical for successful redevelopment and community engagement.

Examples of key partnerships in a brownfields redevelopment project include:

- Local government
- Private groups such as the Chamber of Commerce or Regional Economic Development Organization
- Neighborhood associations
- Faith communities
- Non-profits
- State agencies
- Environmental engineers and consultants
- Lenders
- Private developers

While often a welcome development, brownfields cleanup can raise strong reactions among local stakeholders. How will the remediation process affect the local community, and how can dust and noise be managed safely throughout the process? How clean are the cleanup levels required by state and federal regulators? Can a property ever really be made safe again, and how safe will it be in the long term? Many stakeholders, from cities and their elected leaders to project proponents and state regulators, play a critical role in helping address these concerns. They can, for example,

- Educate neighbors about the regulatory requirements that guide the remediation and redevelopment process;
- Help illustrate how and why different cleanup standards apply, and what that means for the long term health and safety of future occupants or residents; and

---

<sup>10</sup> Evans Paull, op cit.

- Commit to working with the local community to describe and explain in detail what remediation methods will be used and why.

The Center for Creative Land Recycling (CCLR) can also assist. As one of three EPA-funded Technical Assistance to Brownfields Communities providers across the country, CCLR is an independent, non-profit educator and navigator with over two decades of experience working on all aspects of brownfields redevelopment projects. CCLR has special expertise around community engagement, and its services are available at low or no cost to local governments, non-profits and community groups.

Brownfields properties have been redeveloped safely for over 20 years. While challenging, redevelopment can yield major benefits, such as economic development and job creation. Questions about remediation are another example of why public engagement is so critical at every step of the process.

### **On funding, risk and the centrality of partnership**

For all communities, redevelopment takes partnership. The exact shape of that partnership depends on the strength of the local real estate market and the incentives necessary to get the project done.

State and federal funds are particularly a critical source of risk capital, which make projects possible that wouldn't otherwise happen in communities with weaker real estate markets where reinvestment could be particularly transformational. For many brownfields sites, public money has to be the first in, helping lower the barriers to private investment by reducing risk. Otherwise, communities' ultimate goal of bringing getting a private investor to join the project will be delayed or never happen.

Local governments can pursue grant funding to perform environmental assessments, which reduces risk to the developers because assessment is risk capital. In other cases, local governments might help support cleanups. Streamlining administrative requirements, co-applying for grants, and playing a leadership role in educating the community are all critically important actions that a local government can help a project succeed.

Most brownfields redevelopment projects require private investment to succeed. Housing, office or other commercial space, for example, tends to be sufficiently expensive and complex that private investment is necessary to carry a project through to completion. Private developers are therefore critical project partners, and must work with the community to balance local input with local government requirements and economic demands. Especially when a property is abandoned and no person or group (called a "responsible party") exists that can be held responsible for cleanup costs, a private developer will often work with the local government and other actors to locate and manage the funding necessary to accomplish a cleanup. A developer's ability to recoup cleanup costs through later profits derived from the redevelopment of the site is a critical factor in determining whether cleanup and redevelopment can take place.

### **Experiences of Brownfields Redevelopment and Stories of Transformation**

#### *Emeryville, California*

Emeryville, California exemplifies how brownfields redevelopment can transform a community. Until the mid-1970s, this 1.2 square mile city was a forgotten corner of the East Bay, abandoned by industry and suspected of harboring contamination in the soil and groundwater. It was dubbed the "armpit of the Bay

Area” and “rottenest city on the west coast.” There were little in public funds or private investment to elevate the community from its economic malaise. Using resources from the U.S. EPA’s Brownfields Program and local government incentives, the city removed the misconception that its entire area was affected by toxins, bringing private investment and public improvements that, since the mid-1990’s resulted in the creation of 5,000 jobs, 4,000 housing units, parks, infrastructure improvements, and commercial and retail space. Emeryville received assistance from CCLR on legal and financing issues. Its redevelopment projects pioneered new sustainable techniques for stormwater management in dense urban environments, and also created an online environmental database for its dilapidated properties which is today the basis for state brownfields registries.

### *Fresno, California*

In Fresno, CA, CCLR worked with a community coalition beginning in 2010 to organize and facilitate outreach workshops to address the health impacts of brownfields and identify reuse options for targeted sites. The coalition prioritized the creation of a network of community gardens to both reduce environmental health hazards and improve access to healthy food. CCLR developed an Action Plan to better align Fresno’s land use policies with these public health goals. With CCLR’s assistance, in 2015 the coalition was able to convince the City to change local land use policies to facilitate more gardens and farmer’s markets. CCLR also assisted the City in its application for federal resources to help assess specific sites, identified state resources for site development, peer reviewed multiple grant proposals, and worked with the Fresno Housing Authority to identify potential locations for community gardens in their developments. In 2017, CCLR began working with the City of Fresno once again on the implementation of its new EPA Brownfields Area Wide Planning Grant, which focuses on improving economic development, quality of life and public health within the City’s southwestern quadrant.

### *Menomonee Valley, Wisconsin*

The Menomonee Valley in Milwaukee, Wisconsin had a long history of agriculture and industry – once called the “machine shop of the world, and the Valley as its engine.” With deindustrialization, the Valley became Wisconsin’s most visible eyesore. Since the late 1990’s the Valley has been transforming into a national model in economic development and environmental sustainability. Three hundred acres of brownfields have been developed, 44 companies have moved to the Valley, and more than 5,000 family-supporting jobs have been created. One million square feet of green buildings have been constructed and more than 60 acres of new trails and park space with 45 acres of native plants installed have led to improved wildlife habitat and water quality.

### *Alaska, urban and rural*

Most remote Alaskan villages meet their energy needs using diesel. Due to age and harsh weather conditions, above-ground diesel tanks deteriorate over time and become a source of contamination from spills, as well as an air quality issue due to generator emissions. EPA petroleum rules and the Alaska Native Claims Settlement Act of 1971 further complicate Alaskan villages’ eligibility for federal funding to address these issues. As part of its brownfields redevelopment work with the Alaska Native Tribal Health Consortium, CCLR is contributing to efforts to increase renewable energy access for Alaskan Native communities. Part of the solution is a pilot project to test the feasibility of year-round renewable energy development, which CCLR is pursuing with different communities, tribal consortia, state and federal agencies. CCLR has prior experience connecting brownfields and renewable energy: in

2011, CCLR provided training and education to Sea Lion Corporation tribal members and, in coordination with the Yukon River Watershed Intertribal Council, assisted the Sea Lion Corporation in obtaining a U.S. Department of Agriculture and Department of Energy rural grant that resulted in the installation of windmills.

In Anchorage, CCLR has worked with the Cook Inlet Housing Authority and the Alaska Department of Environmental Conservation to remediate contamination from an old gas station and revitalize the Spenard neighborhood.

#### *Lowell, Massachusetts*

Lowell, Massachusetts' Brownfields Program has been working on sites in conjunction with several city planning efforts, and integrates with economic development efforts to foster business growth and vitality. It is credited with seeding many signature projects as the Paul Tsongas Arena, LeLacheur Park, the JAM Garage and the Hamilton Canal District. Among the program's highlights are:

- An inventory of 52 underutilized industrial properties with the greatest redevelopment potential
- Development of a \$30 million sports arena and a \$15 million professional baseball stadium on a former mill site
- Attracted developers who have invested more than \$10 million into the 400,000 square-foot Wannalancit Mills project, and \$36 million into the 700,000 square-foot Boott Mills project, and
- Redeveloping the 15-acre Hamilton Canal District.

#### *Camden, NJ*

What was an unsightly parking lot on a brownfield site is now the Waterfront Technology Center at Camden (WTCC), a sustainable building housing technology and business incubators. The New Jersey Economic Development Authority (NJEDA) financed the remediation and construction of this LEED (Leadership in Energy and Environmental Design) certified Gold building. The space, located at Federal Street and Delaware Avenue, is now home to multiple corporations as well as extensions of Rutgers and Drexel Universities and Cooper University Hospital – all working toward the advancement and integration of technology science.

A preliminary site assessment revealed that the site was contaminated with polynuclear aromatic hydrocarbons (PAHs), arsenic, lead, copper, and zinc in concentrations exceeding state soil standards. Remediation work included the removal of the tank and 267 tons of petroleum-contaminated soil, as well as a cap of concrete, stone, and clean topsoil to prevent exposure to or migration of any contaminants.

With an investment of over \$10million in remediation and construction, the center was financed by the NJ Economic Development Authority, and in place of an abandoned brownfield site and unsightly parking lot now stands a beautiful facility for technological development. This project has not only helped revitalize Camden's waterfront, but also serves as an example of environmental sustainability in a city devoted to innovation and advancement.



**Conclusion: Brownfields are Transformations waiting to happen**

The struggle for many communities is not necessarily running out of land – rather, it’s running out of economically viable land, meaning land that is connected to infrastructure, well located, and able to support local economic development goals in a way that is fiscally and environmentally sustainable. While cleaning and redeveloping contaminated land can be costly, brownfields are more likely to meet a community’s long term economic and sustainability needs than greenfields.

Reusing previously utilized land, then, is not optional for most communities: it is the way forward. The future of our economy, nationally and locally, is built on a foundation of strategic and healthy land use, and to get there, we need to redevelop existing, previously used properties. The land that gave us the economies that supported our parents and grandparents, often with serious environmental consequences, can support us, our grandchildren, and beyond. Brownfields redevelopment is the untapped solution to accommodating our future by repurposing the resources of the past. Brownfields are redeveloped every day, and the technology, regulatory processes, and experience exist to make redevelopment a reality in many more communities.

For assistance with your brownfields redevelopment project, or for more information about land recycling, more generally, contact the Center for Creative Land Recycling. CCLR can provide information, help identify resources, assist with visioning and planning, and regularly provides free or very low cost workshops, webinars, and trainings. With offices in Oakland, CA, the New York Metro Area, and Washington, D.C., CCLR is ready and able to help your community.

Oakland, CA office:

Sarah Sieloff, Executive Director

Ignacio Dayrit, Program Director

415.398.1080

[info@cclr.org](mailto:info@cclr.org)

New York office:

Jean Hamerman, Deputy Director

646.712.0535

[jean.hamerman@cclr.org](mailto:jean.hamerman@cclr.org)