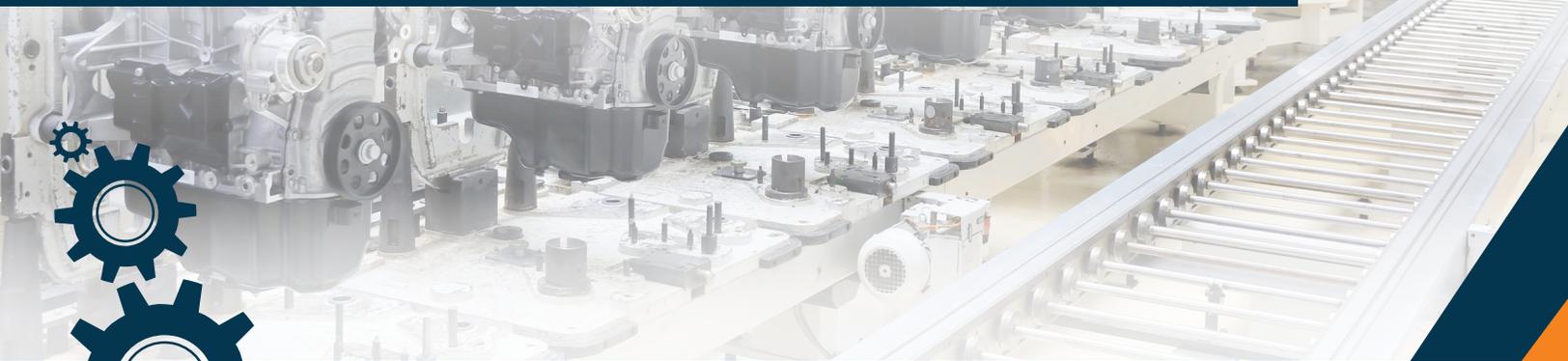
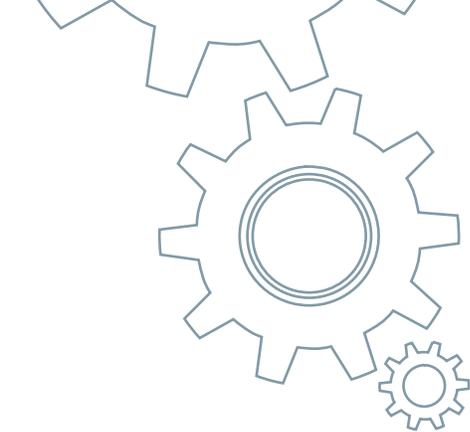


# NEW MANUFACTURING ON OLD BROWNFIELDS





## Foreword

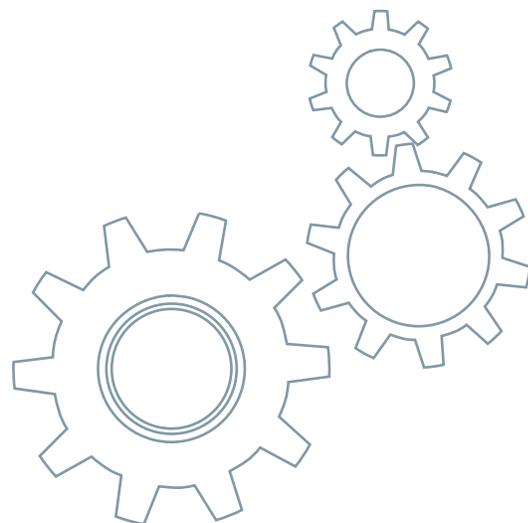
The U.S. Environmental Protection Agency (EPA) celebrated the 20th anniversary of the Brownfields program in 2015. To mark the occasion, EPA launched its Next Generation Brownfields initiatives to promote improved approaches for supporting American communities in their revitalization efforts. This guide was prepared in response to feedback EPA received from brownfields stakeholders interested in learning more about reusing brownfields for new, advanced manufacturing. After a short introductory discussion of the subject, the guide describes three examples from communities that revitalized brownfields for new manufacturing, followed by an annotated guide to informational resources.

## Acknowledgments

This short guide was developed by the U.S. Environmental Protection Agency's (EPA) Office of Brownfields and Land Revitalization, which is part of the Office of Land and Emergency Management (OLEM). Environmental Management Support Inc., and its subcontractor, Sustainable Strategies DC, provided assistance with the drafting and final preparation of this document under Contract EP-W-13-014. EPA would like to also thank the staff from the Lansing Economic Area Partnership of Lansing, Michigan; the City of Huntington, West Virginia; and the company Method, who contributed their time to the preparation and review of the case study information in this report.

For more information, please contact:  
Office of Brownfields and Land Revitalization  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave. NW (5105T)  
Washington, DC 20460

*Cover Photos (left to right): Stock photo of a brown metal engine; inside the Method Factory on a brownfields site in Chicago; and example of energy-saving advanced manufacturing courtesy of energy.gov.*

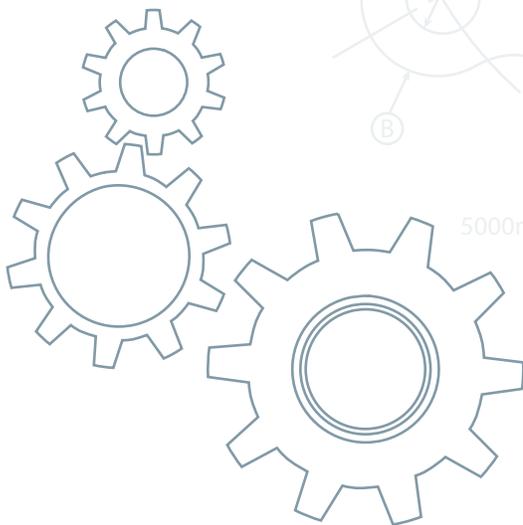


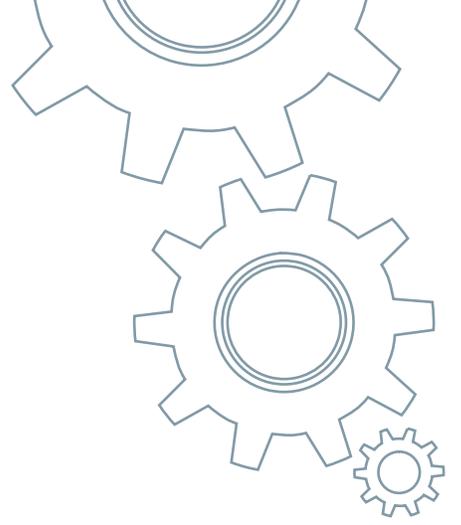
# Table of Contents

- Foreword..... ii
- Acknowledgments..... ii
- Introduction .....vi
- Brownfields as Prime Sites for New Manufacturing ..... 1**
- EPA Assistance to Manufacturing Communities ..... 2**
- Reusing Brownfields for New Manufacturing..... 2**
  - Cleaning Up a Brownfield and the Manufacturing Process: Method’s “South Side Soapbox” in Chicago ..... 3
  - Revitalization Takes Off on the Runway: Lansing Creates Maker Space in Downtown Brownfield ..... 5
  - Making Progress on Advanced Polymers: Huntington to Transform Abandoned Ohio River Waterfront Brownfield into Regional Manufacturing Innovation Hub ..... 7
- Resources Available to Support Manufacturing Communities ..... 9**
  - EPA Initiatives and Collaborative Efforts..... 9
    - EPA and State Environmental Agencies ..... 9
    - EPA OBLR Land Revitalization Tools and Guides ..... 9
    - E3 / Economy-Energy-Environment Program ..... 10
  - Support from Other Federal Agencies..... 10
    - Economic Development Administration ..... 10
    - Investing in Manufacturing Communities Partnership (IMCP) ..... 10
    - Manufacturing Extension Partnership (MEP) ..... 11
    - National Network for Manufacturing Innovation ..... 11
    - SelectUSA ..... 11
    - Small Business Administration..... 11
    - Sustainable Manufacturing Module 101 ..... 11
  - Non-Profit, Private-Sector, Association, and State Support for Manufacturing Communities ..... 12
    - Maker Movement Resources..... 12
    - Manufacturing Alliance of Communities (MAC) ..... 12
    - National Association of Local Government Environmental Professionals (NALGEP) ..... 12
    - National Association of Manufacturers (NAM)..... 13
    - National League of Cities (NLC) Manufacturing Initiative..... 13
    - U.S. Conference of Mayors Advanced Manufacturing Task Force ..... 13
    - Urban Manufacturing Alliance ..... 13
    - State Business, Manufacturing, & Economic Development Agencies ..... 13



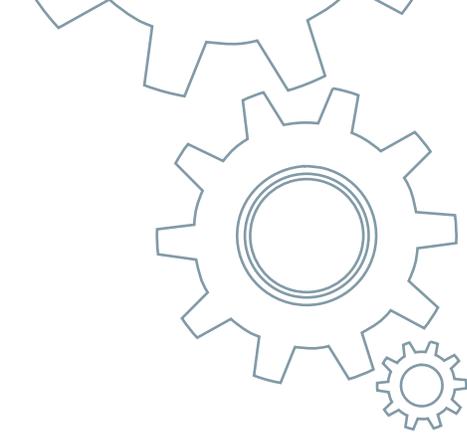
*Photos (left to right): Car engine manufacturing, used by permission; inside the restored Quinn Evans Knapp Building, Lansing, Michigan; and metal sparks stock photo.*





*Advanced manufacturing can help revitalize communities by providing new, living-wage options for workers of all skill levels, fostering entrepreneurship and small business growth, and attracting and retaining millennials. With land needed for new manufacturing, these positive trends provide an opportunity and compelling need for brownfields redevelopment.*

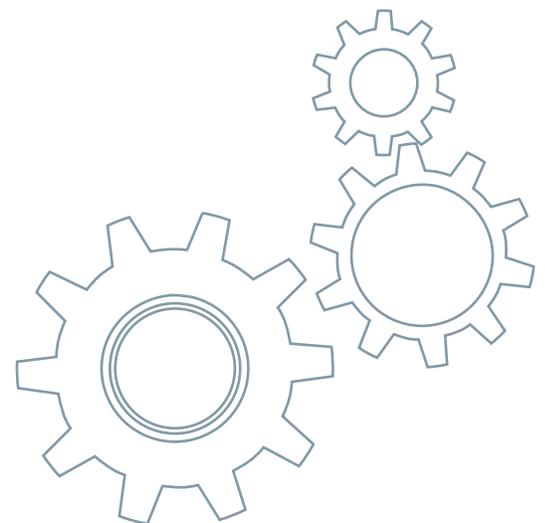




## Introduction

Across America, communities are putting brownfields and blighted areas back into productive use for advanced manufacturing, technology production, and maker movement innovation. This guide highlights opportunities to build new manufacturing facilities and maker spaces on former brownfields, describes three examples of how communities are cleaning up and reusing brownfields for new manufacturing, and directs localities and their community partners to available resources.

The U.S. Environmental Protection Agency (EPA) offers brownfields assessment, cleanup, and revolving loan fund grants, as well as other revitalization tools that can be important aids to communities seeking to reuse these old brownfields for new manufacturing. EPA is fostering the next generation of American manufacturing by collaborating with localities, the private sector and other federal agencies to promote the redevelopment of brownfields.



# Brownfields as Prime Sites for New Manufacturing

In many places, the remnants of America's manufacturing past are posing brownfield challenges today. As manufacturing declined over past decades and production practices shifted, many communities were left with closed factories, blighted properties, and contamination from past industrial activities, resulting in a legacy of brownfields and distressed neighborhoods.

These former manufacturing sites and brownfields can be prime locations for new advanced manufacturing and maker movement innovation. Brownfields and former factories often are centrally located along existing infrastructure corridors (roads, rail, rivers, ports). These properties afford close access to skilled labor, universities, research institutions, downtown assets, and civic centers. Also, many brownfields are in areas that already have significant manufacturing "cluster" advantages—where communities, academia, and businesses are in close proximity and can support the industrial sector. But unlike in the past, when manufacturing required very large facilities, new advanced manufacturing and maker spaces often are driven by small businesses that do not require vast tracts of land and can be located in smaller, infill sites in downtown locations.

Locating new manufacturing plants on old brownfields avoids development of ex-urban, greenfield, farmland and other open spaces, decreasing negative consequences on the environment and the local community. This approach can be particularly favorable to the wave of new businesses seeking to embrace sustainability, embody social responsibility, and demonstrate a commitment to community revitalization. Infill development also helps to revitalize downtowns with additional businesses—suppliers, value-added companies and ancillary services.

There are tremendous opportunities for redeveloping former brownfields for new manufacturing. Since 2010, the American manufacturing sector resurged and grew twice as fast as the overall U.S. economy. Companies increasing production and nearly 800,000 new, high-paying jobs were added, bringing total manufacturing jobs in the U.S. to more than 12.3 million. A report issued by the Manufacturing Institute in January 2015 predicts the need for up to 3.5 million manufacturing jobs from 2015-2025, a figure echoed by the National Association of Manufacturers. The manufacturing sector is a driver of American innovation, R&D, exports, above-average wage and benefits and spinoff economic benefits. Existing factories are expanding, new plants are opening, companies are reshoring, and innovative local approaches are helping create maker spaces, innovation districts, and high-tech hubs in communities large and small. Advanced manufacturing can help revitalize communities by providing new, living-wage options for workers of all skill levels, fostering entrepreneurship and small business growth, and attracting and retaining millennials. With land needed for new manufacturing, these positive trends provide an opportunity and compelling need for brownfields redevelopment.



Despite the positive outcomes of using brownfield sites and blighted areas for new advanced manufacturing growth, there can be barriers to reusing brownfields such as hazardous waste or petroleum contamination, obsolete structures, and outdated or deteriorating infrastructure. Repurposing a brownfield for new advanced manufacturing often involves addressing a variety of environmental and regulatory issues including contamination, demolition waste, water discharges, stormwater management, poor air quality, and Resource Conservation and Recovery Act (RCRA) permitting.

## EPA Assistance to Manufacturing Communities

EPA and partner federal agencies are creating funding opportunities, initiatives and tools, resources, and technical assistance. These are intended to help local governments revitalize their communities, expand economic opportunities through advanced manufacturing and innovation, and assist with sustainable redevelopment and repurposing of contaminated and blighted properties. EPA's Office of Brownfields and Land Revitalization (OBLR) offers brownfields assessment, cleanup, and revolving loan fund grants to communities. Area-wide planning grants also are offered to help communities respond to local brownfields challenges where several contaminated properties are in close proximity—such as in former industrial areas. OBLR also offers several types of technical assistance to communities to help local leaders address brownfields challenges.

EPA plays an important role in federal interagency efforts to promote manufacturing, including the Investing in Manufacturing Communities Partnership (IMCP), which is coordinated by the U.S. Department of Commerce's Economic Development Administration. IMCP is a partnership of 12 federal agencies that provide coordinated, interagency support and funding to 24 designated manufacturing communities across the nation. IMCP assistance includes guidance for the preparation of sites for manufacturing expansion. EPA also is the lead for the six-agency Economy-Energy-Environment (E3) Initiative, which helps manufacturers deploy clean, energy-saving, and cost-saving measures at their facilities. One E3 goal and technical service area focuses on helping localities address and minimize abandoned manufacturing facilities. To date, E3 has helped more than 175 communities, states, and private-sector partners use such tools to promote more sustainable manufacturing. EPA will continue to support E3 and the IMCP by providing technical assistance to help participating parties resolve brownfield and contamination issues that can hinder manufacturing investment and expansion efforts.

## Reusing Brownfields for New Manufacturing

Here are three case-study examples of how communities are revitalizing by cleaning up and reusing brownfields for new manufacturing.



## Cleaning Up a Brownfield and the Manufacturing Process: Method's "South Side Soapbox" in Chicago

The "South Side Soapbox" is a prospering example of how a city can attract an expanding company and bring new, green manufacturing to a former brownfield. Built on the site of a former steel mill, the South Side Soapbox is the first LEED Platinum manufacturing facility in America. The 158,000-square-foot facility is the new home and latest achievement of Method, an innovator in home and personal care products.



*The South Side Soapbox facility is the epitome of a sustainable manufacturing plant, creating a wetlands ecosystem on an urban brownfield, showcasing and utilizing renewable energy, and hosting the world's largest rooftop greenhouse.*

©2015 Patsy McEnroe Photography  
courtesy William McDonough +  
Partners

Method's factory opened in 2015 in Chicago's Pullman Historic District, an area that President Obama designated a National Monument as a symbol of American opportunity, social and racial history, and urban planning. The Pullman Historic District struggled for years. The district includes numerous brownfields on former manufacturing sites and is home to a predominantly African-American community. By cleaning up and revitalizing a large, urban brownfield, Method helped revitalize the surrounding community and started a new chapter in the rich history of the Pullman Historical District.

Method chose to clean up and revitalize the brownfield after thoroughly reviewing more than 150 potential locations. The company assessed each site's ability to meet its manufacturing needs while also sustainably encouraging urban renewal, rehabilitating the surrounding area, and supporting local residents. With the continued growth of Chicago and the general migration of the U.S. population into urban areas, Method did not see the sense in building a factory in a remote, inaccessible location. The Pullman site is strategically positioned near public transit and in an urban area ripe for development. The site's large size allowed Method to combine its manufacturing and bottling operations in one building, which reduces its carbon footprint and improves the efficiency of the production process. Its prime location just south of Chicago puts the company in an excellent position to source ingredients in the region and distribute products efficiently across North America.

The state-of-the-art facility exemplifies Method's comprehensive dedication to sustainability. Reclaiming previously developed land helped Method achieve the LEED Platinum designation in an urban environment. The facility also has numerous sustainability features, including a 230-foot, 600 ft wind turbine that supplies roughly half of the factory's energy and three 45.9



kW “solar trees” located in the parking area that track the sun. The facility also has a green roof with a 75,000-square-foot climate-controlled hydroponic rooftop greenhouse and 1,520 square feet of rooftop vegetation. The rooftop greenhouse, built and managed by Gotham Greens, is the world’s largest rooftop greenhouse, producing over a million pounds of fresh produce each year that is sold to local restaurants and markets, in an area long-considered a food desert. The green roof decreases the facility’s energy use, improves urban air quality and reduces stormwater runoff. Method developed only 3.5 acres of the 22-acre site and is restoring the remaining brownfield land as a natural wildlife habitat. There is no fence around the site, which allows Method to welcome the public to this sizeable tract of rehabilitated greenspace. The company offers tours of the South Side Soapbox to educate visitors and the community on renewable energy, land restoration, and green manufacturing.

Selecting a brownfield was consistent with Method’s restorative vision, particularly its commitment to urban renewal and its desire to locate where the company can hire locally, improve the community through jobs and investment, and connect with regional transportation. In just over a year, Method provided nearly 100 green manufacturing jobs to community members. The South Side Soapbox is close to the new Pullman Park mixed-use development, bringing industry, housing, restaurants, retail, and a hotel together, and attracting prominent companies—such as Whole Foods, Chipotle, and Potbelly—to the area to support the local workforce and a growing community.

The decision to locate its facility on the former steel mill site added costs (including the cost of remediation) and about six months to the overall project timeline (including time required to secure regulatory agency approvals). However, the company’s choice to locate on a brownfield also brought significant returns that outweighed the remediation costs. Method was able to leverage \$8 million in tax-increment financing from the City of Chicago for remediation, which would not have been available had the company chosen to build on a greenfield. The company worked with the site developer and a national engineering firm on the remediation and coordinated with EPA to ensure that cleanup was complete.

Despite the added upfront costs and time required to remediate and redevelop the site, Method’s decision to build its new manufacturing facility on a brownfield made good business sense. The new Southside Soapbox benefits greatly from its proximity to a local workforce, regional transit, and downtown Chicago. In addition, Method strengthened its reputation as a sustainable company focused on people and the planet.

*Green roof above the main entrance of the South Side Soapbox.*

*©2015 Patsy McEnroe Photography  
courtesy William McDonough +  
Partners*



## Revitalization Takes Off on the Runway: Lansing Creates Maker Space in Downtown Brownfield

The Knapp Centre in Lansing, Michigan, is a prominent example of a successful brownfield revitalization for innovation and advanced manufacturing on a relatively small parcel right in the heart of downtown. The development challenges the notion that new manufacturing facilities always require vast tracts of land that often are located far from a city center. The development created hundreds of new jobs, a new space for fashion entrepreneurs and the “Maker Movement,” and innovative business development in an iconic space. The Maker Movement helps to provide the tools needed to design and build almost anything and bring innovators together around creativity, design, and manufacturing.

For many years, Lansing’s downtown was the center of the region’s economy and the source of most of the city’s retail and service jobs. The five-story, 190,000-square-foot Knapp Department Store was the crown jewel of Lansing since it opened in 1937. It was central to the lives of many city residents, who went there for jobs, entertainment, and retail. Then, in the 1970s and 1980s, downtown Lansing declined due to a steady shift of jobs and economic activity from downtown to the surrounding areas. The Knapp Department Store followed suit and relocated to the suburbs. The obsolete downtown building was completely abandoned in 2002. After that, the iconic building, which was added to the National Register of Historic Places in 1983, deteriorated quickly. The site on which it sat was contaminated with asbestos as pieces of the exterior collapsed and created public safety hazards.



*The exterior of the Knapp Centre at the end of the cleanup and revitalization process.*

*© 2016 Quinn Evans Architects & Eyde Company*

The Knapp Department Store building became a highly visible symbol of Lansing’s decline, but now represents Lansing’s willingness to embrace the future. Despite many great ideas and attempts at revitalization, no development proposal got past the planning stage. Then, in 2008, the current owner of the building, the Eyde Company, approached the Lansing Brownfield Redevelopment Authority (LBRA) and City of Lansing for assistance redeveloping the site. The LBRA and city brought together local, regional, state and federal partners to remediate, redevelop, and repurpose the building while preserving its rich history and iconic status in the community. The city completed the \$36 million revitalization project in 2014, and the building reclaimed its prominent position as a thriving landmark that provides economic and community benefits to the city and its residents.





*The Runway is the new maker space in the Knapp Centre supporting fashion entrepreneurs.*

*© 2016 Lansing Economic Area Partnership*

Lansing will benefit further by strategically locating its new fashion incubator downtown in a development that encompasses a single city block. The project is a public-private partnership financed through a package of federal, state, local, and private-sector funding sources and incentives, including \$5.9 million in U.S. Department of Housing and Urban Development's (HUD) Section 108 Loan, \$4 million in Michigan Brownfield Tax Credits, \$3.1 million in New Market Tax Credits, and \$10.1 million in federal and state historic tax credits.

The Lansing Economic Development Corporation located a premier fashion incubator, known as "The Runway," on the first floor of the building, which includes 17,000 square feet of leasable retail space. The Runway provides emerging fashion entrepreneurs with private offices, retail space, and communal design space to support Lansing's emerging fashion industry. With equipment and capacity in 3D printing and computer-based product-prototyping technologies, the Runway helps create a foundation for businesses and provides resources to fashion entrepreneurs to produce collections and move their new brands, styles, and products to market. The three middle floors of the Knapp Centre now contain 83,000 square feet of office space, and the fifth and sixth floors house 23 residential apartments. The project exemplifies the city's devotion to business development while maintaining a strong sense of place for the people who live and work in Lansing.

The Runway offers an incredible opportunity to American fashion entrepreneurs to design and produce the styles of the future. By locating the Runway in the heart of downtown Lansing, the city built a design community and provided access to technologies that lower the barriers to entry for entrepreneurs in ways that democratize innovation in the fashion industry in line with the broader Maker Movement. The Runway and its designers demonstrate that one does not have to live in New York City to realize fashion ambitions and promote related business ideas. The Runway and Knapp Centre also show that key aspects of the manufacturing sector can be housed on properties right in the city—without the need for vast tracts of land.

To date, five businesses have moved into the building and created more than 200 jobs. At full lease capacity, the Knapp Centre is expected to house about 300 employees and bring 30 new residents to downtown Lansing. This revitalization demonstrates how a city can bring new life to an historic building and turn a vacant brownfield into a vibrant community asset.



## Making Progress on Advanced Polymers: Huntington to Transform Abandoned Ohio River Waterfront Brownfield into Regional Manufacturing Innovation Hub

The City of Huntington, West Virginia, is working to reinvent itself and the surrounding area as a center for advanced manufacturing innovation. Economic redevelopment of brownfields is an important part of this strategy. One promising project, currently in the planning and site acquisition stage, is the revitalization of a vacant 27-acre brownfield site as a new advanced polymer technology center.

The anticipated Polymer Technology Center of Huntington (Poly-TeCH) would be constructed on the Ohio River Coal Terminal site, a former coal transfer, rail yard, and barge loading facility. The facility closed in 2009, taking with it the jobs of its last 23 workers. The closure of the facility was only one of many losses Huntington experienced during the long decline of the coal and manufacturing sectors in the region. In the last 50 years, Huntington lost thousands of coal-sector and manufacturing jobs, along with 40 percent of its population and a significant portion of its tax base. Today, more than 34 percent of Huntington's residents live in poverty. Blight and numerous brownfields impede the city's efforts to promote economic development. Reuse of the Ohio River Coal Terminal and other key brownfields would bring new opportunities for economic development, help the city retain a college-educated and skilled workforce, and reinvent Huntington and the tri-state area.



*Rendering of the proposed Poly-TeCH facility along the Ohio Riverfront and current Ohio River Coal Terminal brownfield site.*

© 2015 Edward Tucker Architects, Inc.

With its strategic riverfront location, the future Poly-TeCH site is the cornerstone of a larger brownfield revitalization effort that is expected to catalyze additional economic development and bring advanced manufacturing to Huntington. The Huntington Municipal Development Agency (HMDA), the project lead, intends for Poly-TeCH to transform a blighted brownfield in one of Huntington's most distressed neighborhoods. The Poly-TeCH revitalization will help the City of Huntington position itself as an attractive place to live and a hub for innovation and advanced manufacturing.

A multi-disciplinary team is engaged in reuse planning for the future Poly-TeCH site, using EPA Brownfields funding and other public and private resources. The City of Huntington, HDMA, and Marshall University's Center for Business and Economic Research (CBER) are working with



Rubberlite, Inc., a regional polymer company, to engage public and private-sector leaders in collaboration to draft a conceptual design plan for Poly-TeCH. With funding from the Benedum Foundation, CBER conducted a comprehensive feasibility and market study on Poly-TeCH that assessed the Appalachian regional market for Poly-TeCH's product development, identified management models for the future Poly-TeCH, and conducted a financial feasibility analysis for the project. The study also evaluated other examples and models for manufacturing and technology commercial centers in Huntington.

Once the project is complete, Poly-TeCH and Marshall University will partner to train local and regional workers in advanced manufacturing, engineering, and related fields that can foster high-skilled and well-paid jobs. Poly-TeCH and its corporate partners will help incubate new, light manufacturing strategies into local and regional businesses. CBER also plans to provide additional assistance recruiting tenants for the innovation incubator in Poly-TeCH.

This project and other brownfields redevelopment projects are expected to support economic development and job growth, promote innovation, and help Huntington and the surrounding area prepare for 21st Century commercialization.

The City of Huntington and HMDA are forging partnerships to advance the Poly-TeCH project and other critical economic redevelopment projects. HMDA took the lead on the revitalization of vacant brownfields and closed industrial sites along the Ohio River. Marshall University and its CBER are critical partners that provide planning and business development support. As part of this broader strategy to leverage support and resources, HMDA and Huntington Mayor Steve Williams co-hosted a March 2015 Revitalization Roundtable to launch the Poly-TeCH project. EPA Region 3 Administrator Shawn M. Garvin and Assistant Secretary of Commerce Jay Williams were among dignitaries who headlined the roundtable forum, which brought together numerous federal, state, and local, public and private sector stakeholders. Mayor Williams and HMDA also co-hosted a convening of federal, state, and local partners, including the Economic Development Agency (EDA) and Appalachian Regional Commission (ARC) in December 2015.

Public and private funding already is leveraged to support these revitalization efforts. HMDA currently manages a \$200,000 EPA Brownfields Area-Wide Planning grant, \$400,000 in EPA Brownfields Assessment grants, \$100,000 from the Benedum Foundation, and a \$25,000 Just Transition grant from the Appalachia Funders Network. HMDA also is pursuing funding from the EDA and the ARC for Poly-TeCH site acquisition and additional planning efforts.

Although the project is still underway, a promising array of public and private partnerships, funding, and planning are positioning this key brownfield revitalization and innovative manufacturing hub for success.



# Resources Available to Support Manufacturing Communities

EPA and partner federal agencies provide tools, initiatives, resources, and support to help local governments revitalize their communities, redevelop and repurpose contaminated sites, and expand economic opportunities through advanced manufacturing and innovation. In addition, nonprofit associations, trade associations, philanthropic foundations, state agencies, and other organizations are providing tools, resources, and ideas for community revitalization that encourage economic development, sustainability, and new manufacturing. EPA Brownfields grantees and local communities seeking to promote manufacturing on vacant properties should understand and harness these tools, and partner with private-sector developers, manufacturers and entrepreneurs to adopt these approaches and resources.

## EPA Initiatives and Collaborative Efforts

### *EPA and State Environmental Agencies*

Tools that manufacturers and developers can use to avoid or manage potential environmental liability and contamination risk include:

- *EPA Assessment, Cleanup, Area-Wide Planning, & Workforce Development grants*  
[www.epa.gov/brownfields/types-brownfields-grant-funding](http://www.epa.gov/brownfields/types-brownfields-grant-funding)
- *Bona Fide Prospective Purchasing / All Appropriate Inquiries*  
Under the Brownfield Revitalization Act of 2002 and EPA guidance and policy, a developer or manufacturer seeking to acquire and reuse a brownfield can take advantage of due diligence tools that can protect the new user from environmental risks and liabilities.  
[www.epa.gov/enforcement/bona-fide-prospective-purchasers](http://www.epa.gov/enforcement/bona-fide-prospective-purchasers)  
[www.epa.gov/brownfields/brownfields-all-appropriate-inquiries](http://www.epa.gov/brownfields/brownfields-all-appropriate-inquiries)
- *State Voluntary Cleanup programs*  
Many states provide programs that allow and support voluntary parties, such as a developer or manufacturer seeking to reuse a brownfield site, with a process for limiting environmental liability for previous contamination and effectively addressing contamination concerns at brownfields. Federal law provides an enforcement bar against EPA action at eligible response sites addressed through state cleanup programs.  
[www.epa.gov/enforcement/state-voluntary-cleanup-programs](http://www.epa.gov/enforcement/state-voluntary-cleanup-programs)

### *EPA OBLR Land Revitalization Tools and Guides*

- *2015 Brownfields Federal Programs Guide*  
[www.epa.gov/brownfields/2015-brownfields-federal-programs-guide](http://www.epa.gov/brownfields/2015-brownfields-federal-programs-guide)
- *Setting the Stage for Leveraging Brownfields Resources*  
[www.epa.gov/sites/production/files/2016-04/documents/final\\_leveraging\\_guide\\_document\\_4-19-16.pdf](http://www.epa.gov/sites/production/files/2016-04/documents/final_leveraging_guide_document_4-19-16.pdf)



- *Cleaning Up Brownfields Under State Response Programs – Getting to “No Further Action”*  
[www.epa.gov/brownfields/cleaning-brownfields-under-state-response-programs-getting-no-further-action](http://www.epa.gov/brownfields/cleaning-brownfields-under-state-response-programs-getting-no-further-action)
- *The Revitalization Handbook*  
[www.epa.gov/sites/production/files/2014-06/documents/revitalization-handbook-2014-cleanup-enforcement.pdf](http://www.epa.gov/sites/production/files/2014-06/documents/revitalization-handbook-2014-cleanup-enforcement.pdf)
- *Roadmap for Auto Community Revitalization*  
[www.epa.gov/sites/production/files/2015-09/documents/draft-roadmap-toolkit.pdf](http://www.epa.gov/sites/production/files/2015-09/documents/draft-roadmap-toolkit.pdf)
- *Land Revitalization program and tools*  
[www.epa.gov/land-revitalization](http://www.epa.gov/land-revitalization)

### ***E3 / Economy-Energy-Environment Program***

- *E3’s “Community How-To Guide on Sustainable Manufacturing”*  
[www.epa.gov/e3/community-how-guide](http://www.epa.gov/e3/community-how-guide)
- *EPA’s Sustainable Manufacturing website*  
<https://archive.epa.gov/sustainablemanufacturing/web/html/>

## **Support from Other Federal Agencies**

### ***Economic Development Administration***

- *Public Works & Economic Adjustment Assistance programs*  
EDA works with rural and urban areas to provide investments that support construction, non-construction, technical assistance, and revolving loan fund projects. Grants and cooperative agreements made under these programs are designed to leverage regional assets and support the implementation of economic development strategies that advance new ideas and creative approaches to advance economic prosperity in distressed communities.
- *Planning & Technical Assistance grants*  
Through its Planning and Local Technical Assistance programs, EDA assists eligible recipients in developing economic development plans and studies designed to build capacity and guide economic prosperity and resiliency.  
[www.eda.gov/funding-opportunities/](http://www.eda.gov/funding-opportunities/)

### ***Investing in Manufacturing Communities Partnership (IMCP)***

The IMCP program is an initiative designed to revolutionize the way federal agencies leverage economic development funds, encouraging communities to develop comprehensive economic development strategies that will strengthen their competitive edge for attracting global manufacturer and supply chain investments. Through IMCP, the government is rewarding best practices – coordinating federal aid to support communities’ strong development plans and synchronizing grant programs across multiple departments and agencies.

[www.eda.gov/challenges/imcp/](http://www.eda.gov/challenges/imcp/)

### ***Manufacturing Extension Partnership (MEP)***

Since 1988, the MEP has served U.S. manufacturing, particularly for small- and medium-sized enterprises, focusing on process improvement and workforce development to business practices. Based at the National Institute for Standards and Technology, MEP is built on a nationwide system of centers with 588 service locations in all 50 states and Puerto Rico and has over 1,200 field staff serving as trusted business advisors and technical experts.

[www.nist.gov/mep/](http://www.nist.gov/mep/)

### ***National Network for Manufacturing Innovation***

There are ten linked Manufacturing Innovation Institutes in communities across the nation, representing collaborations of industry, academia, and government partners seeking to leverage resources, invest in manufacturing innovation, and expand economic development.

[www.manufacturing.gov](http://www.manufacturing.gov)

### ***SelectUSA***

Based at the International Trade Administration of the U.S. Department of Commerce, SelectUSA provides a variety of technical assistance services and tools to local governments and economic development officials to facilitate, attract, and retain job-creating investments and foreign direct investment, including in manufacturing.

[www.selectusa.gov/welcome](http://www.selectusa.gov/welcome)

### ***Small Business Administration***

- *Certified Development Company/Section 504 program*  
Section 504 loans are commonly used for purchasing land or existing buildings, purchasing and financing facility improvements, such as street improvements, utilities, parking lots, and landscaping, construction and renovations, and purchasing long-term machinery and equipment.
- *Section 7(a) loans*  
This loan program can help finance a large variety of business purposes. Common uses include long-term working capital for operational expenses, short-term working capital needs for seasonal or construction financing, purchasing equipment and real estate, financing construction and renovations, establishing a new business or expanding an existing business, and refinancing existing debt.
- *Growth Accelerator Fund Competition*  
Launched in 2014, the competition seeks to provide an extra infusion of capital to qualified accelerators and the burgeoning ecosystem in which they play. This then provides resources to boost nearby startup and entrepreneurship communities, particularly those in regions with limited access to capital. Since its start, the program has supported 14,158 jobs and 3,437 startups, providing 88 \$50,000 awards across 39 states, Washington, D.C., and Puerto Rico.  
[www.sba.gov/loans-grants/see-what-sba-offers/sba-loan-programs](http://www.sba.gov/loans-grants/see-what-sba-offers/sba-loan-programs)

### ***Sustainable Manufacturing Module 101***

The International Trade Administration produced this series of educational PowerPoint presentations.  
[www.trade.gov/green/sm-101-module.asp](http://www.trade.gov/green/sm-101-module.asp)



## Non-Profit, Private-Sector, Association, and State Support for Manufacturing Communities

### ***Maker Movement Resources***

The “Maker Movement” is a grassroots, community-driven effort to democratize the tools needed to design and build almost anything and to bring innovators together around creativity, design, and manufacturing, often lowering the barriers to entry for product development, prototyping, and manufacturing. The Maker Movement is on the forefront of technological, economic, civic, and social change, and it is empowering Americans – young and old – to become producers of things, not just consumers of things. Resources for localities seeking to boost the Maker Movement in their own communities include:

- *Maker Mayors Action Report: How Cities Are Fueling the Maker Movement Across America*, by the Manufacturing Alliance of Communities.  
[http://manufacturingalliance.us/wp-content/uploads/2016/06/FINAL\\_Maker\\_Mayor\\_Action\\_Report.pdf](http://manufacturingalliance.us/wp-content/uploads/2016/06/FINAL_Maker_Mayor_Action_Report.pdf)
- *Maker Playbook: A Practical Guide for Reinventing Our Cities*  
<https://makercitybook.com/>
- *Maker Media*: Maker Media is a global platform for connecting makers and is generally credited with launching the maker movement and Maker Faires.  
<http://makermedia.com/>

### ***Manufacturing Alliance of Communities (MAC)***

MAC is a national coalition of local communities that represents localities on national manufacturing policy and resource issues and provides technical support on manufacturing community issues, including redevelopment of brownfields for new manufacturing and maker movement initiatives.  
[www.manufacturingalliance.us/](http://www.manufacturingalliance.us/)

### ***National Association of Local Government Environmental Professionals (NALGEP)***

NALGEP published two guidebooks, with EPA OBLR support, highlighting the business case for reinvestments on brownfields:

- *Profiles of Business Leadership on Smart Growth: New Partnerships Demonstrate the Economic Benefits of Reducing Sprawl*  
[www.nalgep.org/publications/profiles-of-business-leadership-on-smart-growth.html](http://www.nalgep.org/publications/profiles-of-business-leadership-on-smart-growth.html)
- *Smart Growth is Smart Business: Boosting the Bottom Line and Community Prosperity*  
[www.nalgep.org/publications/smart-growth-is-smart-business-boosting-the-bottom-line-and-community-prosperity.html](http://www.nalgep.org/publications/smart-growth-is-smart-business-boosting-the-bottom-line-and-community-prosperity.html)



### ***National Association of Manufacturers (NAM)***

NAM is the largest manufacturing association in the U.S., representing small and large manufacturers in every industrial sector and in all 50 states. NAM runs the Council of Manufacturing Associations, a 260-member coalition of manufacturing trade associations, works with dozens of other “allied association groups” in localities across the country, and organizes the NAM State Associations Group of state-based manufacturers associations. [www.nam.org/](http://www.nam.org/)

### ***National League of Cities (NLC) Manufacturing Initiative***

In 2016, NLC launched a new Manufacturing Initiative to provide peer-to-peer local government networking, a range of technical assistance services, survey research, convenings, and policy advocacy on manufacturing community issues. [www.manufacturingalliance.us/](http://www.manufacturingalliance.us/)

### ***U.S. Conference of Mayors Advanced Manufacturing Task Force***

A task force of mayors from across the nation is seeking to boost national manufacturing community investments and promote public-private partnerships on advanced manufacturing. [www.usmayors.org/about/task.asp](http://www.usmayors.org/about/task.asp)

### ***Urban Manufacturing Alliance***

A national collaborative of nonprofit, for-profit, and governmental stakeholders working together to grow urban manufacturing, create living wage jobs, and catalyze sustainable local economies. [www.urbanmfg.org/](http://www.urbanmfg.org/)

### ***State Business, Manufacturing, & Economic Development Agencies***

- *Pennsylvania Department of Community & Economic Development*  
The Industrial Sites Reuse Program provides grant and low-interest loan financing to perform environmental site assessments and remediation work at former industrial sites to support businesses, communities, and local governments. [www.newpa.com/programs/industrial-sites-reuse-program-isrp/#.V4evRbgrLD4](http://www.newpa.com/programs/industrial-sites-reuse-program-isrp/#.V4evRbgrLD4)
- *Business Oregon*  
Business Oregon, an Oregon state agency, supports manufacturers through a variety of programs, including tax incentives and credits, the Standard Enterprise Zone Program, renewable energy incentives, brownfields and industrial development, and other resources. [www.oregon4biz.com/Oregon-Business/](http://www.oregon4biz.com/Oregon-Business/)





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