



REVITALIZING AMERICA'S MILLS

A Report on Brownfields Mill Projects



Foreword

Across America, communities are revitalizing abandoned, contaminated brownfields. Through collaborative partnerships, thousands of brownfields have been cleaned up and restored to productive use. Brownfields projects carry the spirit of rebirth -- uniting environmental protection, economic development, and community revitalization.

This report focuses on mills -- former textile, wood, paper, iron, and steel mills. The report describes the challenges and opportunities of mill sites with case studies highlighting some of the most creative solutions from across the country. I am proud that EPA was able to provide support for this report, demonstrating the federal government's commitment to local revitalization initiatives. I hope that this report provides inspiration and ideas for the next generation of communities moving forward with brownfields projects of their own.

Susan Parker Bodine

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Front cover photo:

Essex Mills, a former textile mill in New Hampshire, during renovation.

Inside front cover photo: Essex Mills during its operation as a textile mill.



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*Top photo: An illustration of an early textile mill.
Center and bottom photos:
Riverside Mills in Providence, Rhode Island,
before (center) and during renovation.*

Mills - Past, Present, and Future

Introduction and Purpose

Mills tell the story of America. Flourishing mills invoke images of America's industrial strength and success. As mills thrived, so did their surrounding communities, developing into towns and cities. When the mills closed, these towns and cities were left to search for stability and new opportunities outside of their mill town identity. Today, revitalized mills throughout the country serve as reminders of their historic roles and as demonstrations of reinvention.

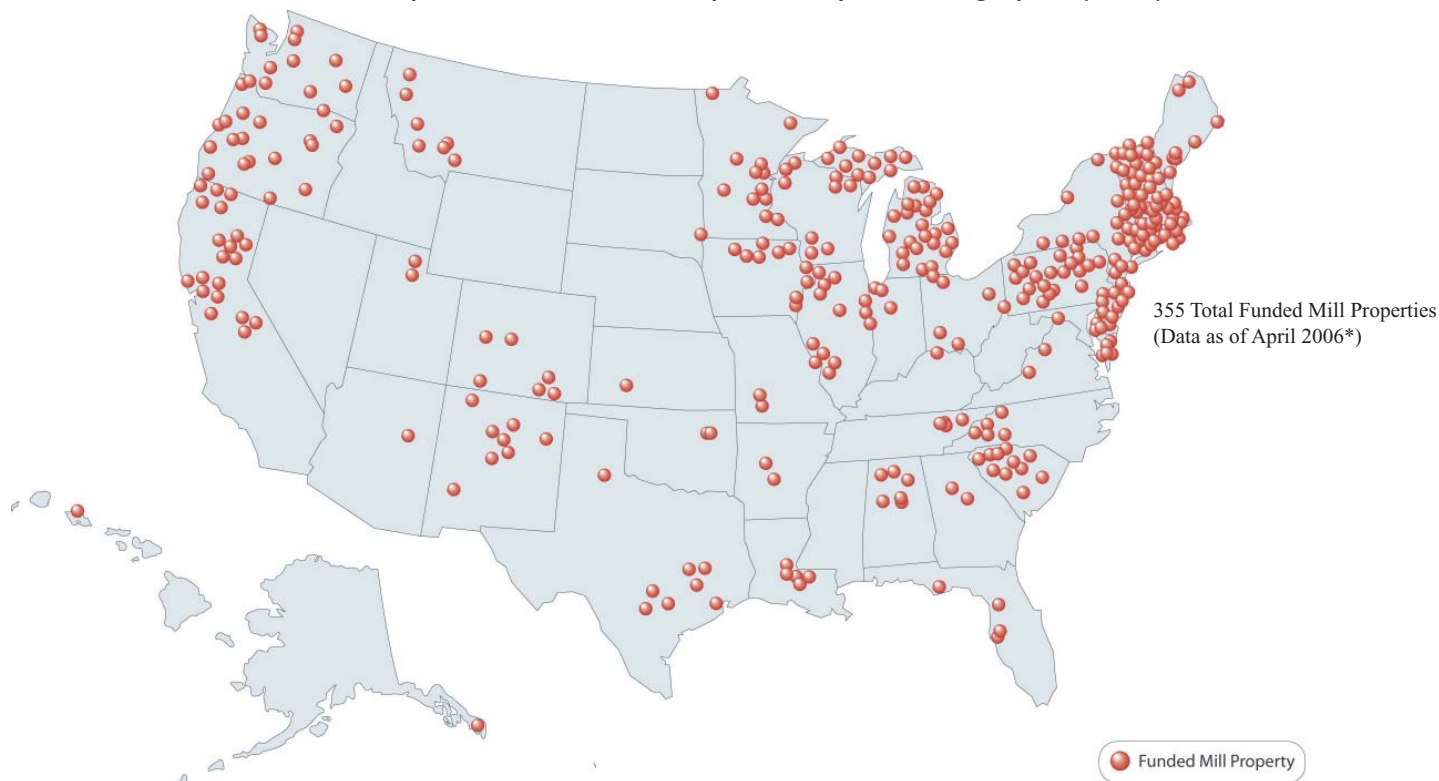
Mill Definition

For the purposes of this report, "mill" refers to an operation that uses raw material to manufacture products that include textiles; pulp, paper, and paperboard; engineered and traditional wood products for construction; and iron and steel for construction. These operations process cotton, wool, and other raw fibers; wood and wood fiber, both virgin and recycled; and iron ore, coal, and metal scrap.

The mill industry's overall decline left an extensive legacy of vacant, often abandoned, and sometimes contaminated former mill sites. These properties now fall under the category of "brownfields"—defined by the U.S. Environmental Protection Agency (EPA) 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." To date, EPA's Brownfields Grant Program has contributed to the revitalization of approximately 355 mill sites throughout the country.

Mill Properties Funded by EPA's Brownfields Program

Data pulled from Assessment Cleanup & Redevelopment Exchange System (ACRES)*



*Data do not include properties targeted by Section 128(a) State & Tribal Response Program Grants; geographic placement of dots may not be exact.

This report highlights examples of successful mill redevelopment, identifies common challenges, describes innovative solutions, and suggests tools and resources available to assist in mill redevelopment.

Background and Overview

The history of U.S. mill operations predates the country itself—going as far back as the first British settlements on the North American continent 400 years ago. Mill operations were the lifeblood of those seedling communities, serving as the economic foundation and often the sole source of livelihood for residents.

Mills were at the heart of the American manufacturing industry. Mills grew from our economic demand for an ever-changing variety of products. As our demands changed with technological advancements, so did the mills that manufactured the products that fueled our economy. In the 1600s and 1700s, iron was in high demand for use in the manufacture of items such as tools, nails, plows, and hinges. In the mid-1800s, technological advances in alloying and manufacturing reduced the country’s demand for iron, and the demand for steel increased as the construction and rail industries flourished.

Sawmills appeared in increasing numbers across the expanding landscape in the early and mid 1800s. These mills processed logs into boards for construction, typically using waterwheel-powered saws until steam power became commercially feasible.

Common Lessons Learned

The project examples used in this report offer insight to some successful strategies for mill redevelopment and reuse. Some examples include:

- Implementing a reuse strategy with community needs at the forefront
- Developing and implement a master redevelopment plan
- Exercising persistence and patience
- Recognizing the ability to preserve historic features
- Building partnerships—enlist political leaders, state environmental agencies, and developers
- Identifying resources and agencies with access to multiple funding sources

Snapshot of Grey Hosiery Mill

The former Grey Hosiery Mill was established in 1915. The mill was a major employer in the county, manufacturing children’s and women’s hosiery for more than 50 years until it closed in 1967. In 2001, the Old Mill Cultural Center, Inc. (OMCC), a local nonprofit, formed to bring a cultural and performing arts center to the city. Understanding the historic importance of the former mill, the city donated the property to OMCC for inclusion in the new arts center development plan. Scheduled to open in 2009, the Mill Center for the Arts will serve the community’s growing need for arts and culture and stimulate commercial activity and the local economy in the downtown area.

Hendersonville, North Carolina



The Grey Hosiery Mill building before redevelopment.

Textile mills, which use machinery to spin and weave raw fibers (such as cotton and wool) into cloth, first appeared in the United States in the late-1700s to early-1800s. Like sawmills, textile mills relied primarily on water power until steam engines became common. The textile mill industry grew significantly from the late 1800s to the early-mid 1900s before beginning a decline.

The Current Landscape

All of these mill industries—textile, wood product and paper, and iron and steel—suffered significant declines during the latter part of the 20th century. These declines can generally be attributed to two major market forces:

New Global Market – Due to the availability of inexpensive labor and raw materials, as well as a sharp drop in product-to-market transportation costs, mills operating overseas gave the U.S. manufacturing industry increased competition, resulting in mill closings and job losses.

Modern/Efficient Manufacturing Processes – Emerging mills in foreign markets used new technologies that improved efficiency and reduced operating costs, while most U.S. mills—built early in or at the turn of the 20th century—were burdened with antiquated equipment and out-dated or labor-intensive production processes.



The front view of the Allen Rogers Wood Turning Mill in Laconia, New Hampshire, before redevelopment.

Snapshot of Five Mile Creek Greenway Project

Jefferson County, Alabama

From the late 1800s through World War II, Jefferson County was a hub of coal mining and coking operations supporting Birmingham's growing steel industry. As the demand for coke declined due to technological advances in steel production, the coal mines, coke batteries and ovens, many of which were located along waterways or rail lines, were abandoned. In 2002, a regional partnership was formed by the Black Warrior – Cahaba Rivers Land Trust along with six cities bordering the creek, Jefferson County, the Regional Planning Commission, and local nonprofit organizations. The primary goal of the partnership is to transform this former industrial area into a 27-mile greenway with a planned system of parks and paths along Five Mile Creek. The City of Tarrant developed a 16-acre park along this greenway. The other communities in the partnership recently acquired park property totaling 350 acres.



The Five Mile Creek Greenway.

The decline of American manufacturing industries left a legacy of vacant, often abandoned, and sometimes contaminated former mill sites. Many of these properties are now brownfields. As do many of the estimated hundreds of thousands of brownfields across the country, former mill properties often lie in prime locations with ready access to transportation and utility infrastructure. Developers and other interested parties may hesitate to become involved with brownfields because of uncertainty about cleanup costs and the extent of potential liability for past environmental contamination.



The Design Center of the Carolinas in Charlotte, North Carolina, formerly the Nebel Knitting Mill.

Each mill site presents unique and varied challenges and opportunities for redevelopment. While different in many ways, mill sites have some common characteristics. Mill properties often are large, encompassing tracts of land, and often require long redevelopment timeframes. Mills often are located on water bodies and rivers and can present distinctive redevelopment potential centered around historical preservation and waterfront redevelopment.

Snapshot of Oakridge Industrial Park

Oakridge, Oregon

A 220-acre mill was once the dominant employer in rural Oakridge, Oregon. The mill manufactured various wood products from 1939 until it closed in 1990, costing the town more than 400 jobs. The town sought to redevelop the site into an industrial park complex. Oakridge conducted numerous assessments, including an EPA Targeted Brownfields Assessment, and a cleanup that included the removal of drums, underground storage tanks (USTs), and contaminated soils.

The city has also focused its efforts on the recreational value of the site, taking advantage of the surrounding public lands that provide an opportunity for tourism.



The 220-acre Oakridge Lumber Mill property prior to redevelopment.

Textile Mills

A vital part of American industry for more than 200 years, textile mills served as the economic foundation for hundreds of emerging towns and cities during the early 1800s and the industrial revolution. U.S. textile operations remained strong until the 1970s, when social, economic, and environmental changes caused many of them to close. Even while some mills were successful in downsizing, adapting, or changing their product altogether, mill communities often suffered from the loss of the industry's jobs, productivity, and support. In the last decade, former textile mill sites have shown renewed promise, with growing interest in their redevelopment from towns and developers.

Opportunities for Redevelopment

Former textile mills are often the centerpiece of a town's history, presenting opportunities for redevelopment. Since many dormant textile mills are designated historic structures, rehabilitation of these buildings, structures, and facades needs to be addressed in redevelopment plans. Many mills are being converted to residential reuse in communities where the cost per square foot for residential housing is high enough to compensate for the expenses associated with redeveloping a mill property and cleaning it to residential standards. Additional redevelopment advantages of these properties include:

- Architecture and history – Textile mills often include appealing architecture features such as high ceilings, large windows, open floor plans, and working infrastructure. These features make abandoned mill properties highly marketable for loft-style commercial and residential redevelopment.
- Desirable location – Since many textile mills were originally water powered, they often are located in the center of towns near rivers and other bodies of water. Some of these properties represent the only land available for development and offer opportunities for towns to center their smart growth goals around the redevelopment of the mill property.
- Potential economic and social revitalization – Regardless of a mill's location, its cleanup and redevelopment can have a large impact on the area's economic and social revitalization. Since many communities were developed solely on the mill economy, the economic and social revitalization of these communities therefore may rely strongly on the restoration of the mill property. Redevelopment of a mill site can increase property values and tax revenues, create much-needed residential or commercial space, and improve the social outlook of the area.
- Accommodating growth – Many communities are experiencing population increases, which results in the need for additional housing, recreational, and work resources. Redeveloped mill properties provide opportunities to accommodate expanding urban populations and increase the economic viability of a community's central business district.

Textile Production Facilities in the U.S.



Between 1972 and 2002, there was a 45 percent reduction in the number of operating textile manufacturing facilities. In addition, the value of American textile production decreased by 62 percent.

● - Information derived from U.S. Census Data provided in Statistical Abstracts for indicated years.

When the Arthur S. Brown textile mill closed its doors in 1985 after more than 100 years in operation, the Town of Tilton, New Hampshire, recognized an opportunity to use the highly visible site for a downtown riverfront park. With assistance from the New Hampshire Department of Environmental Services and a U.S. EPA Removal Action, the town identified and addressed the site's environmental concerns. The Tilton Riverfront Park Committee helped advance redevelopment by securing grants, donations, and a town bond to finance the project. Completed in September 2006, the site is a scenic waterfront community park with a sledding hill, a meadow for play, an ice skating rink, swings, handicap-accessible paths, and picnic areas.



Site of the former Arthur S. Brown mill, redeveloped into the Tilton Riverfront Park.

Challenges to Cleanup and Redevelopment

Specific issues associated with the production histories of textile mills create challenges that affect decisions about their ownership, assessment, cleanup, redevelopment, and financing. These issues include:

- Contamination – Inadequately documented environmental histories cause concern for resolving real or perceived environmental contamination problems. Typical textile mill contaminants include asbestos, mercury, polychlorinated biphenyls (PCBs), lead, other metals, and volatile organic compounds (VOCs).
- Location – Textile mills—especially those in the South—are typically found in remote, rural communities, once hubs of economic activity but far removed from today's economic markets. Their proximity to declining residential areas with small populations can limit potential redevelopment options.
- Size and complexity – Most properties are large, with numerous buildings to address.
- Ownership and liability – Properties may be abandoned, with tax liens and potential liability issues.
- Historic status – Mills often are appealing because of their historical significance. However, the restrictions of an historical designation can increase redevelopment and financing costs.

The following case studies describe redevelopment projects in Taunton, Massachusetts, and Rock Hill, South Carolina. These case studies demonstrate how former textile mill properties can be approached as opportunities for their surrounding communities.



The redeveloped Bates Mill complex in Lewiston, Maine.

Taunton, Massachusetts

Stabilizing the financial risk of this \$15 million redevelopment project through negotiated contingencies within a Purchase and Sale Agreement and historical tax credits, the WEIR Corporation celebrated the grand opening of 64 affordable housing rental units in December 2005.

Background

In 1890, the Cohannet Mill cotton factory opened in Taunton, Massachusetts. It was the third textile mill to locate in what was then a bustling seaport and industrial community. After the factory ceased cotton production, the mill facility was re-tooled for several different industrial uses, including hosiery and yarn manufacturing and curtain production. In 1970, cotton spinning returned to the mill when Robertson Factories took ownership of the facility. In the following years, the local economy declined. As a result, several nearby mills and industrial facilities shut down, leaving abandoned and underutilized properties throughout the historic Weir Village neighborhood. The Robertson Factories eventually ceased mill operations in the 1980s. By 2003, 75 percent of the former Cohannet Mill site (now known as the Robertson Mill) sat empty and Weir Village became one of the most depressed areas in Taunton.

Taking on the Risk

As part of a five-year strategic plan to restore its economy and outlook, the Weir Economic Industrial Revitalization (WEIR) Corporation, a local, nonprofit community development corporation (CDC), targeted the 140,000 square-foot, 6.5-acre former Cohannet Mill property as one of its top three sites for redevelopment. The CDC also identified the redevelopment of the mill property as essential to the revitalization of Weir Village. While a number of reuse ideas were proposed for the mill site, the CDC envisioned a mixed-use, smart growth renovation of the former mill that would create affordable housing and commercial space while restoring the property's riverfront access and associated greenspace.

To make this vision a reality, the WEIR Corporation needed to gain ownership of the property. The City of Taunton demonstrated its support for the project by providing a loan for property acquisition. To minimize the risk of undertaking a project of this magnitude, the CDC completed an environmental assessment of the property and leveraged all of the required \$15 million in financing before purchasing the property in 2002. As part of the process, the WEIR Corporation created a diverse and experienced redevelopment team composed of environmental engineers, developers, architects, and lawyers. In the innovative Purchase and Sale Agreement, the CDC stated the property acquisition (or purchase) would be dependent upon the completion of permitting, financing, and environmental due diligence activities. This agreement enabled the WEIR Corporation to purchase the former mill property in 2003. With the Purchase and Sale Agreement and the environmental assessment documents, the investors received the assurances needed to commit funding to the revitalization of the property.



A new playground facility at the Robertson on the River property.

“People love the space; they like being in an historical mill structure. The market is there, which creates the incentive to do the work to renovate the structures.”

-Teri Bernert,
WEIR Corporation,
Taunton, MA

Textile Mill Case Study

Results

In December 2005, the “Robertson on the River” development opened, featuring 64 affordable residential units and 18,000 square feet of commercial space. The property already is 100 percent occupied, with a waiting list for residency. The development offers riverfront greenspace and views of the river that restored the river’s significance to the community. Other successes include:

- The property was cleaned up to stringent residential standards. This included the removal of contaminated soil (containing lead and polycyclic aromatic hydrocarbons [PAHs]) along former railroad easements, asbestos contamination, a transformer, and two underground storage tanks.
- The development serves as a model for smart growth in Massachusetts. The residences feature a “village” environment with access to transportation, shopping, recreation, and housing.
- This development provides new river access to the community, opening up additional recreational uses.

Financing as Key

Assembling the \$15 million in funding for the Robertson on the River redevelopment project was a complicated process involving many sources. While the historic elements of this project significantly increased redevelopment costs, the site’s historical status worked in the project’s favor. Historic tax credits were essential in allowing the project to proceed. Funding sources for this redevelopment effort are broken down as follows:

Financing Strategy for Taunton, Massachusetts

Funding Source	Amount
U.S. EPA Brownfields Revolving Loan Fund Subgrant to City of Taunton	\$148,000
U.S. EPA Brownfields Revolving Loan Fund Loan to City of Taunton	\$140,000
U.S. EPA Cleanup Grant to WEIR Corporation (CDC)	\$52,000
Low Income and Federal Historic Tax Credits	\$8,915,031
State Historic Tax Credits	\$690,000
City of Taunton Section 108 Loan	\$600,000
Affordable Housing Trust Funds	\$900,000
State Facilities Consolidation Funds	\$321,258
Massachusetts Department of Housing and Community Development – Housing Stabilization Fund	\$750,000
Massachusetts Housing Partnership Loan	\$2,700,000
Mass Development Environmental Assessment Funds	\$54,000
Total	\$15,270,289

Community Strategy and Insight

- Timing is essential: Costs are greatly impacted by timing and can skyrocket if a project experiences significant delays. The WEIR Corporation created an experienced development team that was able to keep the project moving forward. The development team ensured that construction deadlines were met and helped coordinate multiple funding sources.
- Leverage of funding sources: Having assembled a mix of loans and grants, the WEIR Corporation used more than 10 funding sources to finance this project. State tax credits and U.S. Department of Housing and Urban Development funds were key to secure other funding and move the project forward.



The exterior of the redeveloped Robertson on the River property.

Rock Hill, South Carolina

Through a master plan and wide-ranging partnerships, the City of Rock Hill addressed the economic, social, and health impacts of the closure of four textile mills.

Background

For more than 100 years, Rock Hill, South Carolina, was an important cotton market for county farmers. Nearly 20 textile mills were located in the area at the peak of the cotton manufacturing era. The Rock Hill Cotton Factory opened in 1881 as the first steam-driven textile mill in South Carolina and played a leading role in the city's industrialization. The Highland Park Mill, Arcade Textile Mill, and Rock Hill Body Company Mill all opened in the 1890s.

A gradual decrease in cotton crop production and an increase in labor costs spurred the decline of the area's textile industry until it virtually ceased to exist in the early 1980s. As a result, Rock Hill lost its major economic driver and faced a citywide unemployment rate of 17 percent. In addition, the neighborhoods that existed as mill communities for generations suffered severe economic and community impacts, including declining housing and infrastructure, and rising crime and health concerns.



The Rock Hill Cotton Factory building before redevelopment.

Meeting the Challenge

Rock Hill needed a strategy to quickly address the loss of its economic driver to prevent further social and economic decline. Two partnerships emerged to develop and support this strategic approach. The Rock Hill Economic Development Corporation (RHEDC) formed in 1983 to combat the area's economic decline and spearhead redevelopment. The Rock Hill Council of Neighborhoods was incorporated in 1999 to preserve and promote the integrity of the city's neighborhoods and assist with the transformation of former mill communities.

In 2003, project partners developed the Textile Corridor Master Plan that included a feasibility study and physical assessment for the redevelopment of Old Town Rock Hill and four associated mill sites. In 2004, the city and county worked with the Rock Hill Council of Neighborhoods to develop the Neighborhood Master Plan to restore infrastructure, provide amenities, and spur investment.

The RHEDC successfully stabilized the city's economic situation, enabling the city to focus on improving neighborhoods and redeveloping the mill sites. In 2002, the city and the council worked together to revitalize the former Arcade Textile Mill site. A fire at the property in 1996 destroyed the mill building and heightened environmental concerns. RHEDC and the city jointly acquired the property through foreclosure and demolished the remaining structures. Assessment and cleanup of the property are ongoing. Once completed, the site is scheduled for redevelopment as single-family homes that will complement the surrounding neighborhood.

Two other mills in Rock Hill were restored to preserve their historic architecture. In 2001, a private developer worked with the City of Rock Hill and formed a public/private partnership with the York County Council on Aging and the Rock Hill Housing Authority to redevelop the Highland Park Mill into 116 apartments for the elderly. In May 2006, the RHEDC sold the five-acre former Rock Hill Cotton Factory for \$300,000 to Williams & Fudge, a national college loan agency, and Bryan Barwick, a Charlotte developer, for office and retail space that will bring 200 jobs to the area. The fourth mill, the Rock Hill Body Company, is privately owned and plans for redevelopment are in place.

Textile Mill Case Study

Results

Rock Hill's textile mill sites remain important landmarks and symbols of the city's industrial heritage. Targeting these properties for cleanup and redevelopment is eliminating environmental health hazards, decreasing crime, creating housing and retail space, and improving and updating the infrastructure of the community. Cleanup of the Arcade Textile Mill property will eliminate a major blight on the neighborhood and allow the property to once again benefit the community it supported for generations.

"The projects are unique because of the unique architectural features of the buildings...people want to own them."

-Mary Foote,
City of Rock Hill's Economic
and Urban Development Department

Community Strategy and Insight

- Implement a neighborhood strategy: In 2004, the city, Rock Hill Council of Neighborhoods, and community members organized to develop a neighborhood strategy for the Arcade-Westside neighborhood. The strategy identified obstacles to community revitalization such as zoning and environmental conditions and created a vision for the neighborhood with short, medium, and long-term implementation plans.
- Develop and implement a master plan: A team consisting of urban economists and designers, landscape architects, transportation and environmental engineers, and a historian was hired to develop a process to achieve feasible redevelopment goals. Due to the underlying social, economic, and health effects of the mill closures, it was necessary to involve a range of partners that included neighborhood organizations and elected officials. These partners identified reuse options that would provide the greatest overall benefit to the community.

Financing

The Master Development Plan was financed by \$1,540,000 pledged by seven local partner organizations, as well as from EPA and the U.S. Department of Housing and Urban Development. Additional federal grants were used to complete the assessment, cleanup, and redevelopment of the textile mills. For example, in 2003, the city obtained an EPA Brownfields Assessment grant to target three of the former mill properties. In 2005, the city received an EPA Cleanup grant and the State of South Carolina's first EPA Revolving Loan Fund loan to address environmental issues at the Arcade Textile Mill site.



The senior housing apartments located in the redeveloped Highland Mill building.

Financing Strategy for Arcade Mill in Rock Hill, South Carolina

Funding Source	Amount
S.C. Department of Health and Environmental Control	
U.S. EPA Brownfields Revolving Loan Fund Loan	\$425,000
U.S. EPA Brownfields Assessment Grant	\$200,000
U.S. EPA Brownfields Cleanup Grant	\$160,000
HUD Community Development Block Grant (CDBG)	\$755,000
Total	\$1,540,000

Wood Product and Paper Mills

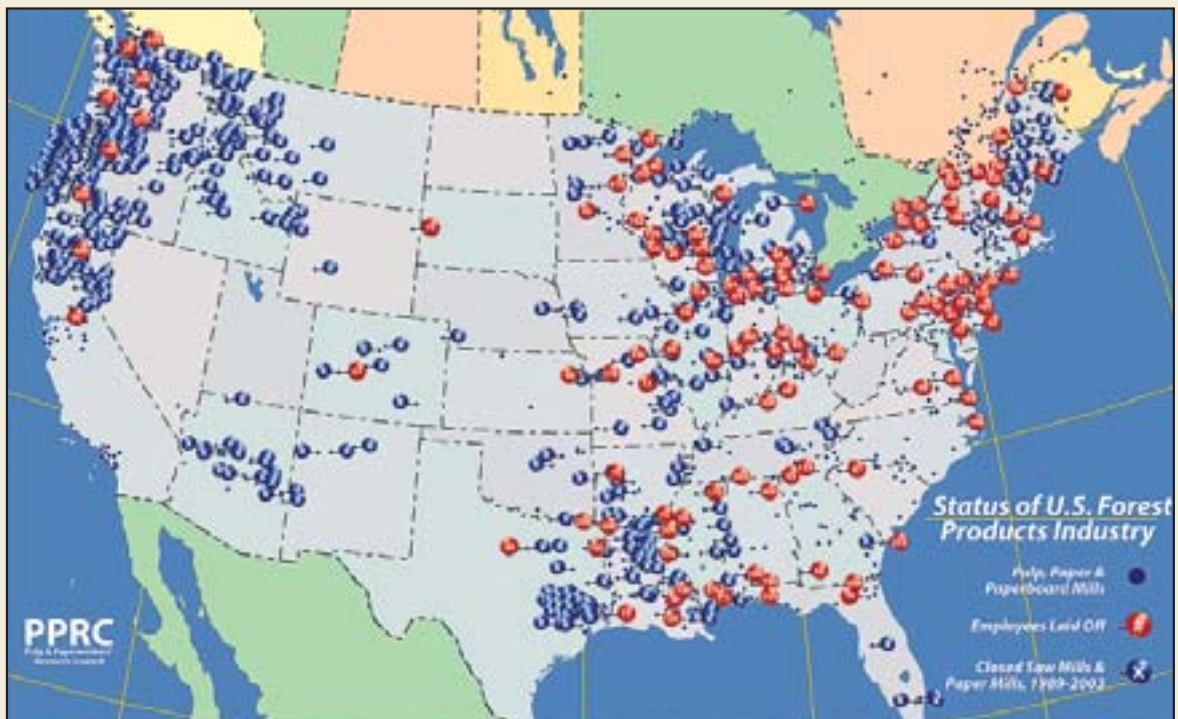
A centerpiece of America's agricultural and industrial past, wood product and paper mills were some of the earliest mills in the country. From the first paper mill established by William Rittenhouse in Pennsylvania in 1690 to modern, large-scale sawmill operations in the South and Pacific Northwest, wood product and paper mills were always a staple of the American economy. The shift to a global market, fluctuations in the availability of timber, and the modernization of the manufacturing process left many communities with abandoned and underused wood and paper mill properties. According to 1972 U.S. Census data, there were approximately 40,000 operating wood and paper product facilities in the U.S. In 2002, that number had dropped to approximately 23,000.

Opportunities for Redevelopment

Former wood product and paper mill properties have several common features that make them particularly attractive to developers, including:

- Waterfront redevelopment potential – Most wood product and paper mills are located along bodies of water, creating opportunities for waterfront redevelopment. In rural areas, waterfront property is ideal for recreational use, while in towns or cities its scenic attributes make it valuable for greenspace and mixed-used redevelopment.
- Recreational development – Because of their proximity to public lands, many of these properties can be reused for recreation and tourism.
- Historic preservation – Since many wood product and paper mills date back to the 1800s and are considered historic landmarks, they are eligible for a variety of federal, state, and local historic preservation grants. Historic preservation also extends and enhances the heritage, value, and cultural elements of the community.

Status of U.S. Forest Products Industry



Map courtesy of The Pulp & Paperworkers Resource Council

Challenges to Cleanup and Redevelopment

The redevelopment of former wood product and paper mill properties involves a number of complicating issues, including:

- Contamination – Former wood product mills typically are contaminated with wood-treating chemicals and residual waste material. Many still have abandoned and leaking USTs that were once used to store fuel to power machinery. Soil and ground water contaminants can include petroleum, VOCs, creosote, dioxins, and lead.
- Unclear government jurisdiction – Because many former wood product mills are located on water bodies, government jurisdictions often overlap. Resolving jurisdictional issues can cause lengthy delays and contribute to setbacks in the implementation of cleanup and redevelopment plans.
- Historic preservation – Because many wood product and paper mills date back several centuries, they are considered historic landmarks and require preservation. Historic preservation enhances the cultural landscape and protects the heritage of the area, but it also can increase project costs.

The following case studies for Little Falls, Minnesota, and Astoria, Oregon, demonstrate that redevelopment of wood product and paper mills can retain some of the cultural heritage of their communities.



The former Astoria Plywood Company in Oregon before redevelopment.

Snapshot of Allen Rogers Wood Turning Mill

A five-acre, former wood products mill on the banks of the Winnepesaukee River in the heart of downtown Laconia, New Hampshire, will soon be redeveloped into residential housing. Best known for making wooden eggs for the White House Christmas Tree, the mill closed in 1998 due to lack of business. The property was bought by a housing developer who targets mill buildings in New Hampshire and Southern Maine. The state's Department of Environmental Services provided a \$500,000 EPA Brownfields Revolving Loan Fund loan to clean up the site.

Following similar residential development projects that succeeded in southern New Hampshire, Laconia will benefit from the building's attractive characteristics, including large windows, brick construction, and a waterfront location.

Laconia, New Hampshire



The rear view of the Allen Rogers Wood Turning Mill before redevelopment.

Little Falls, Minnesota

In Little Falls, Minnesota, the community and its partners redeveloped the Hennepin Paper Mill into a park while overcoming the challenges of historic preservation and finding funding sources.

Background

Located on the banks of the Mississippi River and in the heart of rural Little Falls, Minnesota (population 8,300), the Hennepin Paper Mill was the oldest paper mill west of the Mississippi. For more than four generations, from 1890 to 1998, workers took pride in the mill as “the place to work,” producing newsprint, poster board, construction paper, and at one time, every Crayola crayon wrapper in the country.

Upon closure of the mill, Minnesota Power, one of the current property owners, began to remove unwanted materials from the site and initiated assessment and cleanup activities. Two miles of asbestos piping was discovered, as well as petroleum-soaked bricks and soils, dye- and PCB-contaminated concrete, and other soil contaminants. In 2003, Minnesota Power and the Burlington Northern Santa Fe Railroad Company, which owned and used a portion of the site as a transportation corridor, donated the entire property to the city.

Meeting the Challenge

With a retired Hennepin Paper Mill employee leading the way, private citizens, the city council, city administrative staff, and Community Development of Morrison County staff joined together to hold public meetings and pursue avenues of funding. The community exercised patience and persistence to reach consensus and decided to develop the narrow, rectangular-shaped property into a park. The redevelopment plan recognized that the property’s shape, its past railroad activity, and the disrepair of its buildings made commercial development unlikely.

The extent of contamination on the site was initially underestimated; assessments funded by Minnesota Power revealed the true size and extent of the contamination. In 2003, the city applied for and received two EPA Brownfields Cleanup grants and an EPA Brownfields Revolving Loan Fund grant.

As determined by a review under Section 106 of the National Historic Preservation Act, the site met the criteria to be listed in the National Register of Historic Places. Consultations for this designation included working with local historical societies, former Hennepin Paper employees, and area Indian tribes. A Memorandum of Agreement (MOA) was signed with EPA, the Federal Energy Regulatory Commission, the Minnesota State Historic Preservation Office, and the Mille Lacs Band of Ojibwe, acknowledging that historically significant uncontaminated building structures and various pieces of equipment would be salvaged during the cleanup and redevelopment process and used as cultural artifacts throughout the park. This was the first negotiated brownfields MOA under Section 106 of the National Historic Preservation Act.

Cleanup began in November 2003. By June 2004, approximately 1,340 tons of contaminated materials and soils were removed from the site. Redevelopment began in June 2004, and by August the site was seeded, concrete walkways installed, and gravel walking paths were in place. Mill Park was officially dedicated in June 2005.



*The smokestack at the Hennepin Paper Mill before redevelopment.
The salvageable lower portion of the smokestack
was included in the design of the park.*

Paper Mill Case Study

Results

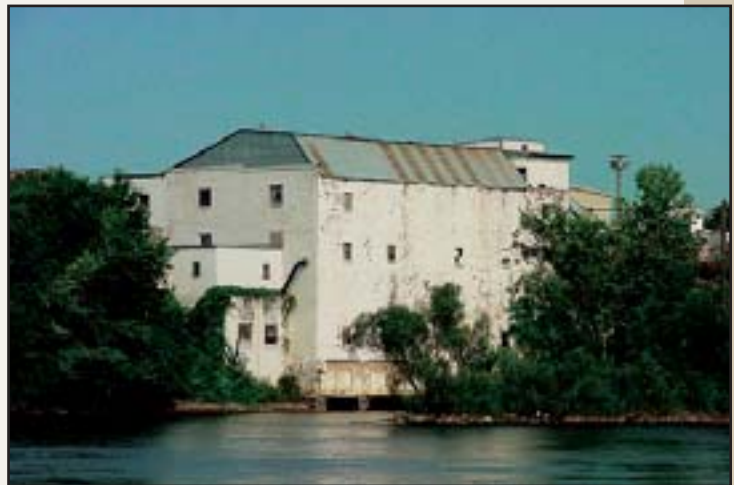
The cleanup and redevelopment of the Hennepin Paper Mill site is complete. Through active community involvement and community leadership, and by incorporating some historic attributes, redevelopment of the site preserved original artifacts from the mill, including the company sign, brick arches, original millstones, and the canal that diverted water and powered the facility. An outdoor environmental educational facility and a winter ice rink are currently under development. Informational kiosks and a memorial to employees lost in industrial accidents will be featured. A kiosk at the north end of the property will acknowledge a historical Indian gathering spot near the waterfalls.

Financing

Initially, Minnesota Power contributed \$600,000 toward assessment and cleanup of the Hennepin Paper Mill property. The Minnesota Department of Employment and Economic Development and Minnesota Department of Natural Resources each contributed \$200,000. In 2003, EPA awarded the City of Little Falls a \$200,000 Brownfields Cleanup grant for hazardous substances and a \$200,000 Brownfields Cleanup grant for petroleum. The community also received a \$200,000 Brownfields Revolving Loan Fund grant. The Minnesota State Legislature allocated \$1 million to the project, Morrison County donated \$100,000, the city contributed \$137,892 and a private foundation contributed \$10,000.

Community Strategy and Insight

- Persistence and patience: A retired Hennepin Paper Mill employee, private citizens, the city council, city administrative staff, and Community Development of Morrison County staff kept the project moving forward by pursuing varied funding sources. Securing funds and reaching community consensus took more than five years; but the community prevailed by remaining patient and focused on its goals.
- Preserve historic features: The city engaged the community in a comprehensive planning and design process and drew other federal, state, tribal, and local partners into the project, extending and enhancing the project's historical reach and cultural elements. The redevelopment incorporated historic attributes and preserved original artifacts from the mill, including the company sign, brick arches, original millstones, and the canal that diverted water and powered the facility.



The rear view of the Hennepin Paper Company before redevelopment.

Financing Strategy for Little Falls, Minnesota

Funding Source	Amount
U.S. EPA Brownfields Cleanup Grant – Hazardous Substances	\$200,000
U.S. EPA Brownfields Cleanup Grant – Petroleum	\$200,000
U.S. EPA Brownfields Cleanup Revolving Loan Fund Grant	\$200,000
Minnesota Power	\$600,000
Minnesota Department of Employment and Economic Development	\$200,000
Minnesota Department of Natural Resources	\$200,000
City of Little Falls	\$137,892
Morrison County	\$100,000
Minnesota Legislature	\$1,000,000
A Private Foundation	\$10,000
Total	\$2,847,892

Astoria, Oregon

The City of Astoria overcame the high cost of cleaning up the former Clatsop Mill by contacting the state environmental agency early in the process, including the developer in discussions with the state environmental agency, and keeping the community involved in the decision-making process. The project's extensive cleanup effort paved the way for the completion of the Mill Pond Village—a mixed-use redevelopment that includes a public promenade, shops, a credit union, and individual residential housing lots, and preserved the aesthetics of the city's fishing-village heritage.

Background

Astoria, Oregon, is a small, rural fishing community located at the mouth of the Columbia River, approximately 100 miles west of Portland. The 20-acre former Clatsop Mill property at the east entrance of town is a gateway to the community. The mill opened in the early 1870s. The Astoria Plywood Company took over the facility's plywood veneer milling, drying, pressing, sanding, and cutting operations from 1950 until it closed the mill in 1989. The property includes a 3.7-acre pond, located north of where the former processing buildings stood, that was used to store logs and received runoff from the mill.

The mill was a small cooperative, worker-owned facility. When operations ceased, the property was abandoned. The mill's bankruptcy cost the city 216 jobs. Multiple liens were assessed against the property by the U.S. Small Business Administration, the local power company, and other local businesses. The liens impeded the city's ability to claim title to the property, creating a complex redevelopment situation. In addition, in an attempt to recoup a portion of the money owed to them, several of the

lien holders auctioned off equipment and salvageable pieces of the mill buildings, leaving a desolate brownfield laden with more than a century of contamination.

Meeting the Challenge

After EPA performed a Superfund removal action to clear some of the site's more severe contaminants—including 14 buried capacitors and approximately 10 tons of PCB-contaminated soil—the city contacted the Oregon Department of Environmental Quality (DEQ) to discuss cleanup and redevelopment. After an assessment funded through an EPA Brownfields grant detailed the extent of the site's remaining contamination, the city entered negotiations with the many lien holders to relinquish their stakes in the former mill. It was clear that the amount of the liens held against the property was greater than what they could realistically expect to recover from the value of the property. The process came to fruition when the property was officially signed over to the city in 1996.

The city wanted to clean up the site's remaining contamination and then leverage private funds for redevelopment, but could not afford the estimated \$1.5 million cleanup cost. In response, the Oregon DEQ proposed to pay for half the cost of cleanup, and ShoreBank Enterprise Pacific (formerly Shore Trust Advisory Services), a nonprofit business development organization, facilitated a loan for the remainder.

Cleanup activities began in August 1996 and took four years. Part of the process included draining a portion of the mill pond, dredging the sediment, and refilling it with approximately 57,000 gallons of clean water. Cleanup also included engineering controls, such as using a layer of clay to cap portions of previously contaminated "hot spots."



Completed homes at Mill Pond Village.

Lumber Mill Case Study

Once cleanup was complete, the city requested design proposals for the property. In 1999, the city sold the property to Venerable Group, a Portland development company, with the condition that the company follow environmentally sustainable deed restrictions and institutional controls as part of the development. An integral part of deed restrictions and institutional and engineering controls that were arranged with Oregon DEQ included methods suggested by the developer for meeting the environmental restrictions while preserving the property's aesthetic value. The city and the Oregon DEQ drafted prospective purchaser agreements exempting the developer and any future property owners from liability due to prior contamination. During this entire process, the city involved the community in decision-making and planning, leading to redevelopment strategies that complemented the community's goals for the area. The city's commitment to keep the community engaged in the planning proved invaluable to the project.

Results

Thanks to the city's persistence, support from the community and the Oregon DEQ, and the preservation of the site's aesthetics, the former Clatsop Mill property was redeveloped into the Mill Pond Village. This mixed-use redevelopment includes a public promenade, shops, a credit union, and 82 individual, residential housing lots. Surrounding the former mill pond and bordering the Columbia River, these houses were designed to maintain the aesthetics of Astoria's fishing-village heritage. The development also contains plenty of greenspace, including five public parks with a gravel river walk that provides panoramic views of the Columbia River.

Community Strategy and Insight

- Contact the state environmental agency early in the process: As the first step, the city contacted the Oregon DEQ to discuss cleanup and redevelopment opportunities. This proved to be the key to the project's success. Involving DEQ in discussions concerning the future use of the property helped establish a mutually beneficial partnership that led DEQ to pay for half of the cleanup costs.
- Include the developer in discussions with the state environmental agency: A key part of the design of the deed restrictions and institutional and engineering controls that were arranged with Oregon DEQ, included methods for meeting the environmental restrictions while still preserving the property's aesthetic values.
- Keep the community front-and-center in the decision-making process: The city involved the community in the decision-making and planning process that lead to redevelopment strategies that complemented community goals for the area, a benefit that more than compensated for project delays.



The Mill Pond Village development along the Columbia River.

Financing Strategy for Astoria, Oregon

Funding Source	Amount
U.S. EPA Brownfields Assessment Grant	\$200,000
ShoreBank Enterprise Pacific (formerly Shore Trust Advisory Services)	\$750,000
Oregon Department of Environmental Quality (DEQ)	\$750,000
Total	\$1,700,000

Iron and Steel Mills

Through its rise and decline, the U.S. steel industry was an integral part of the nation's economy and infrastructure. While today the industry is increasing its competitive stance through restructuring and operational efficiencies, it left behind a legacy of older, obsolete mills—including buildings and land—with which surrounding communities must contend.

Opportunities for Redevelopment

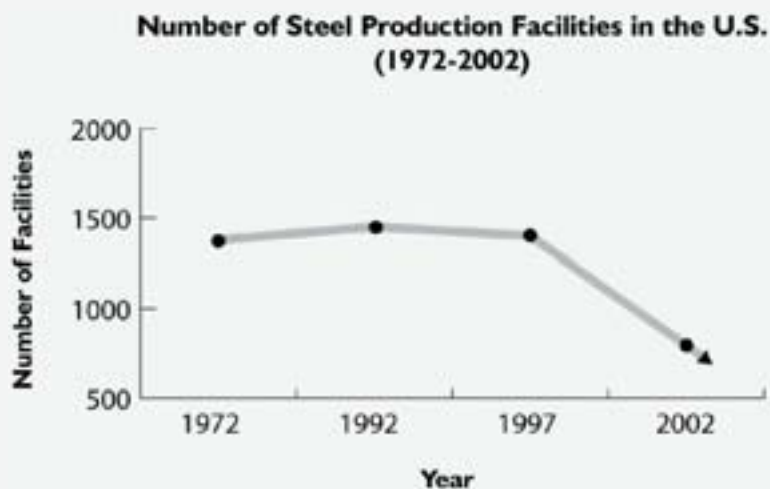
Steel mill redevelopment offers unique opportunities for communities. Many former steel mills feature the following benefits:

- Central location – Because many towns and cities were built around steel mills, these properties are often still located in the heart of their communities, providing opportunities for revitalizing downtown areas.
- Transportation access – Many steel mill properties have established rail, highway, and river access, which can support new industrial development and/or facilitate transportation-oriented development.
- Easily parceled land – Large tracts of land, often in single ownership, lend themselves to parceling. Because parceling can lead to multiple reuses, redevelopment need not rely on attracting a single economic engine.
- Potential economic diversification – Redevelopment of steel mill properties offers communities the chance to diversify their economies, ending their dependence on one industry.
- Greenspace and recreation – Because many steel mills were located along waterways, used rail transportation, and are large in size, they lend themselves to greenway planning and recreational opportunities including rails-to-trails.



Exterior of the former 14 Inch Mill in Sterling, Illinois, now the Sterling Industrial Park.

Steel Production Facilities in the U.S.



Between 1972 and 2002, almost 600 operating steel manufacturing facilities shut down.

● - Information derived from U.S. Census Data provided in Statistical Abstracts for indicated years.

Challenges to Cleanup and Redevelopment

Like other brownfields projects, steel mill cleanup and redevelopment can be challenging due to real or perceived contamination, liability and regulatory issues, permitting processes, cost overruns, and limitations on financing. Compared to typical brownfields projects, there are some challenges more commonly associated with steel mill redevelopment, including:

- Gaining control of property – Many steel mill properties are controlled by a bankruptcy court/trustees or the steel companies themselves. Negotiating terms of sale or property transfer with these entities can be a challenge.
- Subdividing large tracts of land – As many of these properties are large in scale (encompassing 100 acres or more), they must be subdivided to best fit the needs of multiple end-users.
- Contamination – Contaminants typical of steel-related industries include petroleum-based products (used to cut and coat steel) in spill areas, PCBs, asbestos in structures, USTs, and slag.



The McCollough-Unis School, on the former Sharon Steel site in Dearborn, Michigan.

The following case studies for Sterling, Illinois, and Johnstown, Pennsylvania, prove that while redevelopment of abandoned or underused steel mill properties may seem daunting, it can be done.

Snapshot of Firth Sterling Site

In 1889, the Sterling Steel Company began steel manufacturing on the 14-acre Firth Sterling site in McKeesport, Pennsylvania. The company's obsolete steel mill shut down in 1981 and the property fell into bankruptcy. A private company obtained the property in 2000 and sought the involvement of the Redevelopment Authority of Allegheny County (RAAC) after potential environmental issues prevented site improvements. EPA-funded Phase I and Phase II assessments identified minor petroleum and asbestos contamination. Following assessment activities, RAAC purchased the site and commenced cleanup in fall 2005 using EPA Brownfields Cleanup grant funding. RAAC is evaluating redevelopment proposals for the Firth Sterling property to determine which will provide the highest and best use for the city and county. Possible reuses include a waste-to-energy facility as well as a transfer station for recycling wood waste.

McKeesport, Pennsylvania



The Firth Sterling steel mill before redevelopment.

Sterling, Illinois

When the Northwestern Steel and Wire (NWSW) Company closed its doors in 2001, the community of Sterling devised a plan for redeveloping the 720-acre property. The city's aggressive approach to finding purchasers, securing funding, and building partnerships resulted in the redevelopment of 92 percent of the property in five years.

Background

The City of Sterling, Illinois (population 15,500), in rural Whiteside County, lies approximately 100 miles west of Chicago. Founded in 1879, the NWSW steel mill grew to become the county's largest employer, with 4,600 people on its payroll by 1979. Its decline in the 1980s and 1990s led the company to file for bankruptcy in December 2000 and eventually close its doors in 2001.

Meeting the Challenge

When NWSW closed, 1,500 workers lost their jobs and 7,500 seniors lost their retirement benefits. The county's former lifeblood now represented a monumental challenge: what to do with the 720-acre industrial property.

Sterling took an aggressive posture to redevelop the site. In 2001, the city, community members, labor leaders, and economic development partners worked together to develop a strategic plan for the area, resulting in the Rock River Redevelopment project. The strategy involved:

- Determining which portions of the property could be readily reused;
- Identifying available economic redevelopment programs and funding sources; and
- Building partnerships with all project stakeholders.

The city built a strong relationship with the bankruptcy trustees and court that resulted in the city acting as real estate broker for the bankruptcy trustee – a role usually reserved for a brokerage firm. The city conducted preliminary negotiations with possible purchasers and took the parties' information to the bankruptcy trustees and court. This scenario accelerated the property divesture process and allowed the city to negotiate the best end use of the property.

While the city acted as real estate broker, the Greater Sterling Development Corporation (GSDC) took the lead in identifying and pursuing potential purchasers of the property, partially based on a list of former NWSW customers. This list included Leggett and Platt, a FORTUNE 500 company that manufactures coil springs for furniture and mattresses. The company's initial concerns about environmental liability issues were allayed by working with the city and entering into a Prospective Purchaser Agreement with EPA. This agreement provided Leggett and Platt with federal Superfund liability protection. Leggett and Platt purchased the core of the dormant mill, approximately 145 acres, to produce steel rods and billets for its own use. Assessments revealed that in general, contamination on the property was minimal and little cleanup was required.

Results

The former NWSW mill now hosts 11 operating businesses, including the Leggett and Platt steel operation, a retail outlet, and a grain terminal for shipping to markets in the Southwest. Other accomplishments associated with this project include:

- Capital investment of over \$59 million
- Completed environmental assessments on 700 acres, or 97 percent, of the property
- Creation of 350 permanent and 300 temporary jobs
- Retaining the core areas of the former steel mill
- A much more diversified business community



New lumber store under construction at the former NWSW mill.

Steel Mill Case Study

Today, Sterling's diversified economy is drawing larger retailers and manufacturers to the area, including a major retail distribution center that opened in April 2006 and employs more than 700 workers.

Financing and Special Incentives

To make this project possible, the city sought assistance from federal and state agencies and partnered with local government entities and private interests to secure funding for assessment, cleanup, and redevelopment. Funds from the Illinois Environmental Protection Agency (IEPA) paid for assessments on 70 percent of the property, and U.S. EPA funds were used for assessments on the remaining 30 percent. These assessments removed uncertainties regarding potential contamination of the property and provided the catalyst for cleanup and redevelopment. Local government entities made financial commitments to the project and provided special incentives to entice developers to reuse the property, including:

- Creation of Tax Increment Financing District
- Whiteside County Enterprise Zone (EZ) provided incentives for developers (tax credits and educational training opportunities)
- City provided free legal services
- City negotiated with county to eliminate back taxes
- City waived permit fees (building and demolition)
- City and GSDC advertised the property in trade journals and other media sources

Community Strategy and Insight

- Enlist political leaders: Sterling's mayor, city council, and city manager were the catalysts and project champions of this redevelopment effort. These city leaders worked with the community to develop a plan for the property and aggressively pursued available funding and prospective purchasers.
- Leverage resources: The city identified resources it could commit to the project, including funding and staff. The city also invested \$1.6 million, provided free legal services, and waived permit fees while seeking funding and support from other sources.
- Build partnerships: The city forged partnerships with all potential stakeholders, including federal and state agencies, local government entities, businesses, and community groups. The city also successfully built relationships with less traditional stakeholders, such as the bankruptcy court and trustees.



The Wallace Street Foundry Building before renovation.

Financing Strategy for Sterling, Illinois

Funding Source	Amount
U.S. EPA Brownfields Assessment Grants	\$400,000
Illinois EPA	\$420,000
Illinois Department of Transportation	\$500,000
Illinois Department of Commerce	\$25,000
City of Sterling	\$1,600,000
Sterling Township	\$200,000
Whiteside County	\$60,000
Private and Foundation Investments	\$1,200,000
Total	\$4,405,000

Johnstown, Pennsylvania

To successfully clean up and redevelop the Cambria Iron Works steel mill complex, the Johnstown Redevelopment Authority (JRA) and its many partners faced the challenge of gaining property access and ownership. With the Authority's persistence and support from other agencies, JRA was able to obtain ownership of the property, and some aspects of redevelopment are already complete.

Background

Johnstown was one of Pennsylvania's preeminent steel manufacturing communities, due in part to the 12-acre Cambria Iron Works Complex, established in 1848 by the Cambria Iron Company. The Bethlehem Steel Corporation purchased the Complex in 1923, and after 50 successful years, significantly reduced its Johnstown operation. The company closed all of its Johnstown plants in 1992, ending steel production in the city.

At the height of Johnstown's steel industry, mills stretched for more than 12 miles along the city's rivers. Closure of steel mills in the region had a devastating impact, and in response the JRA sought to diversify the local economy by returning the Cambria Iron Works Complex, with its prime downtown location, to reuse. The city was declared a "distressed community" under the state's Municipalities Recovery Act in 1993. Today it operates under a state-mandated Recovery Plan that requires the diversification of the employment base to promote economic growth.

Demographic and Economic Information for Johnstown, Pennsylvania

Johnstown, PA	1950-1953	1980-1983	Present
Population	63,232	35,000	23,900
Unemployment rate	4.1 percent	25 percent	5.1 percent
Tons of steel produced	2,000,000	700,000	0



The Cambria Iron Works carpenter shop building after renovation.

Leading the Charge

After five years of negotiations with Bethlehem Steel, the company allowed JRA to access the multiple sites within the Cambria Iron Works Complex in 1998. This extremely lengthy and labor-intensive process involved several stakeholders, including the Pennsylvania Department of Environmental Protection (PADEP), in an attempt to convince the company to allow JRA to purchase the Complex's sites. JRA also worked with state officials to encourage Bethlehem Steel's participation in the project. In 2003, Bethlehem Steel filed for bankruptcy and the company's assets were purchased by International Steel Group, Inc. (ISG). The Complex's sites subsequently were purchased from ISG by JRA.

JRA's purchases within the Complex included the Carpenter Shop, Machine Shop, Blacksmith Shop Rolling Mill Office Building, Electric Storage Building, the Pedestrian Footbridge and several acres of vacant land. The Complex also included the Roll Shop, Axle Works, and 11-inch Mill Buildings, which are privately owned and now bustling with industrial activity.

With assistance from more than \$1 million in EPA Brownfields grant funding, JRA spearheaded the Cambria Iron Works Complex project. JRA worked with several partners in addition to EPA to obtain funding for the Complex's assessment, cleanup, and redevelopment.

A central player in the project is the Johnstown Partnership, which represents local officials and businesses who work together to promote strategic projects for the benefit of the city and region. This innovative partnership includes JRA, the City of Johnstown, Johnstown Area Regional Industries, the Greater Johnstown Chamber of Commerce, and the Pennsylvania Department of Community and Economic Development (DCED). Through this partnership's outreach efforts, multiple federal, state, and local agencies provided financial and technical resources for the restoration and reuse of the Cambria Iron Works Complex. More than 20 different funding sources contributed to the assessment, cleanup, and restoration of the Complex.

Steel Mill Case Study

Results

JRA's multi-partner efforts are returning the Cambria Iron Works Complex to light industrial use as cleanup and redevelopment continues. Johnstown is overcoming its dependence on one industry by redeveloping some of its brownfields, including several within the Cambria Iron Works Complex for use by new industries such as wood refinishing and steel plate processing. With buildings dating back to the Civil War era, the Cambria Iron Works Complex is the only steel mill in the country with a National Historical Landmark designation. Such a designation requires upgrading rather than demolishing some of its buildings. As a result, some of the historical structures are now being reused for their original purposes, such as blacksmithing and carpentry. Newer technologies also are being employed at other industrial facilities within the Complex, including powder-coating metals and precision assembly of towers for the wind-energy industry. The most historic of the buildings, the 1854 Blacksmith Shop, is slated to become part of the Southwestern Pennsylvania Heritage Parks as a working blacksmith shop and tourist destination.

To date, approximately 400 jobs resulted from the cleanup and redevelopment of the Cambria Iron Works Complex. Final cleanup and redevelopment of the Complex will create at least another 100 jobs. While Johnstown's steelmaking heyday is long past, thanks to JRA and numerous partners, the city is making a comeback as an attractive community in which to work and live.

Community Strategy and Insight

- **Persevere:** For many years, JRA had difficulty gaining site access—much less ownership—of the Cambria Iron Works Complex. JRA's dedication to the project overcame these challenges and made it possible to achieve the progress evident across the site today.
- **Designate a lead agency with access to multiple funding sources:** JRA spearheaded the entire Cambria Iron Works Complex redevelopment project, including obtaining all grant funding and marketing the project. The agency reached out for help when necessary and worked with as many influential organizations and individuals as possible.
- **Diversify uses:** JRA successfully developed sites within the Cambria Iron Works Complex for a wide range of new uses. Some of the sites are being used for their original historic uses, while newer technologies are operating at other properties within the Complex.



The Pedestrian Footbridge provided access for the employees of the Cambria Iron Works Complex to Johnstown neighborhoods.

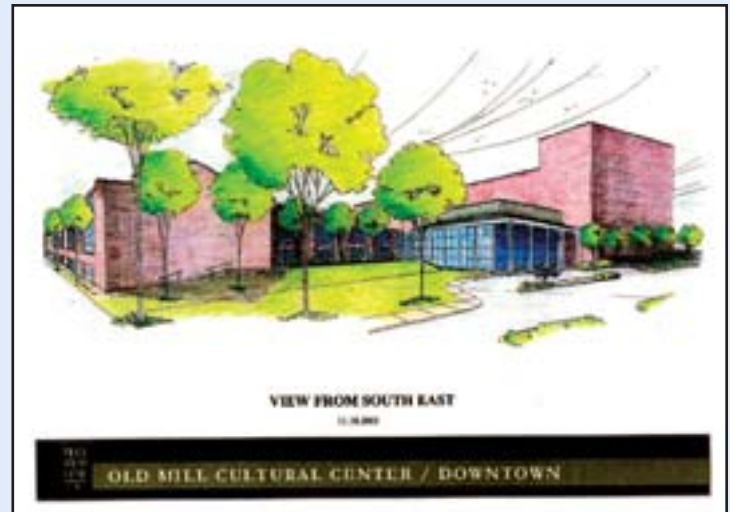
Financing Strategy for Johnstown, Pennsylvania

Funding Source	Amount	Funding Source	Amount
U.S. EPA Brownfields Assessment Grants	\$800,000	PA DCED Communities of Opportunity Program	\$100,000
U.S. EPA Cleanup Grants	\$800,000	PA DCED Growing Greener II Program	\$275,000
U.S. Economic Development Agency	\$550,000	Pennsylvania Historical and Museum Commission	\$180,000
National Parks Service	\$20,000	PA Department of Conservation and Natural Resources	\$252,000
National Parks Service Save America's Treasures Program	\$460,000	Pennsylvania Heritage Parks Program	\$135,000
U.S. Army Corps of Engineers	\$300,000	Southwest Pennsylvania Heritage Preservation Commission	\$225,000
Appalachian Regional Commission	\$100,000	PA Department of Transportation's Transportation Enhancements Program	\$500,000
PA DCED Industrial Sites Reuse Program	\$1,262,025	PA Department of Environmental Protection Growing Greener Program	\$150,000
PA DCED Infrastructure Development Program	\$1,205,952	Building improvements paid for by private building tenants	\$1,500,000
PA DCED Employment and Community Conservation Program	\$75,000		
Total			\$8,889,977

Realizing the Possible

Mills, an essential part of our industrial heritage, have cycled through periods of activity and decline, and, in some cases, closure and abandonment. As the successes highlighted in this report demonstrate, mill sites are receiving recognition for their redevelopment potential and finding value and use once again. From Lewiston, Maine, to Astoria, Oregon, the successful combination of vision, partnerships, public, and private funding at mill properties is restoring land and revitalizing communities.

The more than 350 mill projects assisted by EPA's Brownfields Program are only a handful of the sites finding paths back to productive reuse. There are many more mills remaining that need attention to reclaim their place in the history and fabric of communities. The challenges and solutions presented in this report provide a starting point for communities to begin looking at their former mills as opportunities for revitalization. The final section of the report provides resources and tools to help with that effort.



An artist's rendering of the Old Mill Cultural Center in Hendersonville, North Carolina, formerly the Grey Hosiery Mill.



A Wal-Mart distribution center under construction in Sterling, Illinois at the former Sterling Mill site.

A Summary of Federal Resources

U.S. Environmental Protection Agency

Brownfields Program

www.epa.gov/brownfields

Brownfields assessment, cleanup, job training, and technical assistance

Appalachian Regional Commission

Area Development Program

www.arc.gov/index.do?nodeId=101

Projects that increase job opportunities and/or develop and improve infrastructure in Appalachia

U.S. Department of Agriculture, Rural Development

Water and Waste Disposal Loans, Loan Guarantees, and Grants

www.rurdev.usda.gov

Development and repair of water, sewer, storm drainage and solid waste systems in rural areas with populations of 10,000 or less

U.S. Department of Housing and Urban Development

Community Development Block Grants, Section 108 Loan Guarantees, Brownfields Economic Development Initiative, HOME Investment Partnerships Program

www.hud.gov/grants/index.cfm

Brownfields site acquisition, site assessment, and cleanup activities; building demolition/rehabilitation; housing construction; brownfields project planning

U.S. Department of Labor

Job Training and Technical Assistance

www.doleta.gov/grants

Job training services and technical assistance expertise, such as courses on technologies used for site assessment and cleanup activities

Economic Development Administration

Public Works and Economic Development Facilities Program

www.eda.gov/AboutEDA/Programs.xml

Construction or rehabilitation of essential public infrastructure and facilities that generate jobs and investment; brownfields redevelopment; heritage preservation development

National Park Service

Federal Save America's Treasures Program Grants

www.cr.nps.gov/helpyou.htm

Preservation or conservation of historic districts, sites, buildings, and structures

National Park Service and Internal Revenue Service

Federal Historic Preservation Tax Incentives

www.cr.nps.gov/hps/tps/tax/index.htm

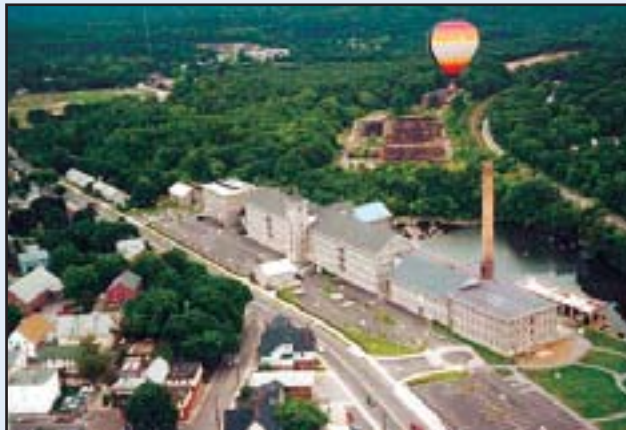
Twenty percent tax credit for the certified rehabilitation of certified historic structures; 10 percent tax credit for the rehabilitation of non-historic, non-residential buildings built before 1936

U.S. Army Corps of Engineers

Center of Expertise for the Preservation of Historic Buildings and Structures

www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=historic&pagename=mainpage

Program provides a variety of preservation services, including technical assistance in the evaluation and rehabilitation of historic structures



Windham Mills in Windham, Connecticut, after renovation.

State Resources

U.S. Environmental Protection Agency

State and Tribal Response Program Grants

www.epa.gov/brownfields

State Brownfields and Voluntary Response Programs:

An Update from the States

http://www.epa.gov/brownfields/pubs/st_res_prog_report.htm

Program provides grants to states and tribes to develop or enhance their response programs that address the assessment, cleanup, and redevelopment of brownfields. The report explores the evolving landscape of state environmental, financial, and technical programs, including the incentives designed to promote brownfields cleanup and redevelopment.

Illinois Department of Transportation

Transportation Enhancement Program

www.dot.il.gov/opp/itep.html

Program provides funding for infrastructure improvements

Illinois Environmental Protection Agency

Brownfields Redevelopment Loan Program

Municipal Brownfields Redevelopment Grant Program

Brownfields Cleanup Revolving Loan Fund

www.epa.state.il.us

Programs provide funding for brownfields investigation, cleanup, and demolition costs

Massachusetts

Massachusetts Historic Rehabilitation Tax Credit

www.dor.state.ma.us/rul_reg/reg/830_CMR_63_38R_1.htm

The credit is equal to a percentage, not to exceed 20 percent, of qualified rehabilitation expenditures

Massachusetts Department of Housing and Community Development

Massachusetts Housing Finance Agency

Massachusetts Affordable Housing Trust Fund

www.masshousing.com/imageserver/BusinessPartners/AHTF_Guidelines.pdf

Program provides resources to create or preserve affordable housing for households whose incomes are not more than 110 percent of median income

MassDevelopment

Brownfields Redevelopment Fund

www.massdevelopment.com/financing/lg_brownfields.aspx

Program provides low- or no-interest loans for site assessment and cleanup activities

Minnesota Department of Employment and Economic Development

Cleanup Revolving Loan Fund

Contamination Cleanup Grant Program

Contamination Investigation and Response Grant Program

Action Plan Development Grant Program

www.pca.state.mn.us/publications/reports/brownfields-guide.pdf

Programs provide loans and grants for brownfields assessment and cleanup activities and meeting requirements for public participation in project review



*The North Fork Timber Mill
in Madera, California.*

Minnesota Department of Natural Resources

Brownfield Site Assessment Grant Program

www.dnr.state.wi.us/org/aw/rr/rbrownfields/sag.htm

Program provides funding to conduct brownfields assessment activities

North Carolina

Tax Credit for the Revitalization of Historic Mill Facilities

www.nccbi.org/resources/LB-06-16-06.pdf

Credit equal to a percentage of the qualified rehabilitation expenditures or the rehabilitation expenses with respect to the eligible site



The Nebel Knitting Mill in Charlotte, North Carolina.

Oregon Department of Environmental Quality

Brownfields Program

www.deq.state.or.us/wmc/cleanup/brn0.htm

In conjunction with EPA Region 10, the program provides funding for brownfields assessment, cleanup, and other activities

Pennsylvania Department of Community & Economic Development

Industrial Sites Reuse Program

Infrastructure Development Program

Employment and Community Conservation Program

Communities of Opportunity Program

www.newpa.com

Programs provide funding for brownfields assessment, cleanup, and redevelopment as well as infrastructure development

Pennsylvania Historical and Museum Commission

Keystone Historic Preservation Grant Program

Pennsylvania History and Museum Grant Program

www.artsnet.org/phmc/grants.htm

Programs provide funding for preserving or restoring historic resources listed in or eligible for listing in the National Register of Historic Places as well as projects that fulfill one of three goals outlined in the Pennsylvania Historic Preservation Plan

South Carolina

Textiles Communities Revitalization Act

www.scstatehouse.net/code/t06c032.htm

Twenty-five percent credit against property taxes or a 25 percent state income tax credit for redevelopment of abandoned textile mill sites

General Resources

Local Initiatives Support Corporation

Funding and technical assistance

www.lisc.org/section/products/

Housing and community facility development (child care centers, schools, health care facilities, playing fields), and economic development (industrial, office, and retail buildings)

National Trust for Historic Preservation

National Preservation Endowment

www.nationaltrust.org/funding

Funding provided to nonprofit organizations, government agencies, commercial entities, and private citizens for restoration of historic homes and income-producing properties



A former steel factory in Springfield, Vermont.

National Association of State Development Agencies

Directory of Incentives for Business Investment and Development in the United States: A State-by-State Guide

www.nasda.com

Database of state funding available, including: loans, loan guarantees, infrastructure improvement grants, enterprise zones, pollution control incentives, employment tax credits, land and building loans and tax credits, job training packages, site development support, and venture capital

National Council of State Historic Preservation Officers

Historic Preservation Legislative Database

www.ncsl.org/programs/arts/statehist_intro.htm

Database for all state legislation or state constitution articles that contain specific references to historic properties

NeighborWorks America

Financial support, technical assistance, and training

www.nw.org

Community-based revitalization efforts, including economic development and affordable housing projects

National Association of Development Organizations

Technical assistance and training

www.nado.org

Training and resources on brownfields redevelopment topics including rural components

National Association of Local Government Environmental Professionals

Technical assistance and training

www.nalgep.org

Research and informational resources on brownfields and other topics including smart growth, USTfields, and clean water

Northeast-Midwest Institute

Technical assistance

www.nemw.org

Information including financing and community involvement aspects of brownfields projects

National Brownfield Association

Technical assistance and education

www.brownfieldassociation.org

Information, educational opportunities, and events for a wide range of brownfields stakeholders

International City/County Management Association

Technical assistance

www.icma.org

Information and services for projects such as economic development and environmental management

The above is a list of representative resources; similar programs may be found within other organizations



*Inside back cover photo:
Essex Mills, a former textile mill in New Hampshire.
Back cover photo: The Royal Mill in West Warwick, Rhode Island.*





United States
Environmental Protection
Agency

Office of Solid Waste and
Emergency Response

EPA-560-R-06-001
November 2006
www.epa.gov/brownfields/