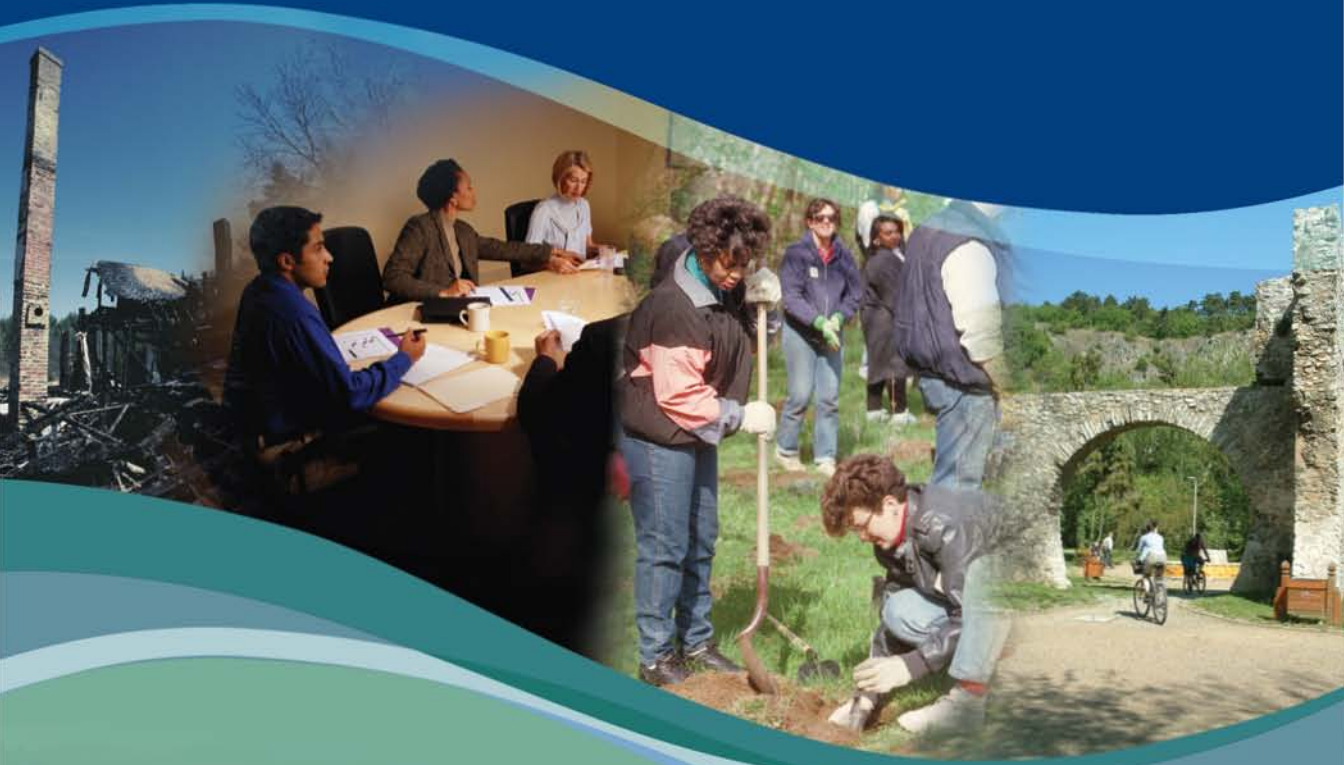


Leading Change for Healthy Communities and Successful Land Reuse



U.S. Department of
Health and Human Services
Toxic Substances
and Disease Registry

The findings and conclusions in this book are those of the authors and do not necessarily represent the views of the Agency for Toxic Substances and Disease Registry.



Foreword

ATSDR's Brownfield/Land Reuse Health Initiative helps communities incorporate health considerations in land reuse decisions. People can turn vacant or underused land into places that benefit the whole community. ATSDR works with the U.S. Environmental Protection Agency (EPA), state and local officials, developers, and communities to include health in these types of projects.

ATSDR promotes community health as part of redevelopment. There are many ways which we can assist the community. We may measure the level of chemicals in the body to determine if people are exposed to contaminants. We may communicate

and educate communities on health risks in this community. We may evaluate health outcomes for certain diseases. We may assist in organizing the community to address identified health issues.

The Leading Change for Health Communities and Successful Land Reuse is the "how to" guide for all members of the development community to promote health as a part of redevelopment. The diverse community projects in this book represent some of the many examples of healthy redevelopment projects across the country.

Tina Forrester, Ph.D

Acknowledgement

ATSDR would like to thank the ATSDR Brownfield and Land Reuse Development Community Panel as the "think tank" behind this book. ATSDR would like to thank the story providers and their development communities for having successful stories to tell. These

development communities include the dedicated residents who believed their communities could be healthier places to live and put in countless hours to attain that vision.

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With the right resources, planning, and commitment, you can readily incorporate community health into redevelopment plans

Introduction

Why Did ATSDR Prepare This Book?

An estimated 450,000 brownfield and land reuse sites—from old gas stations and abandoned buildings, to former industrial sites, methamphetamine labs, vacant lots, and rural dumps—are found throughout the United States. These sites can range in size from less than one acre to thousands of acres.

Cleaning up and reinvesting in brownfields/land reuse properties improves and protects the environment, economy, and surrounding community's health and well-being. However, not all plans for brownfields redevelopment and land reuse consider the community health issues that should be addressed. Furthermore, evaluations of improvements tend to focus on environmental and economic impacts and rarely include measurement of health and social improvements.

This book is intended to serve as a resource to help integrate community health into land reuse and revitalization projects. The case studies in this book demonstrate how a diverse array of communities and tribes successfully revitalized abandoned properties and the lessons learned in the process.

Who Is the Audience for This Book?

Many different people make decisions related to community development. For example, health officials

might be responsible for evaluating brownfields contamination; community groups might decide what type of development would benefit the neighborhood; and planners might acquire funding. The Agency for Toxic Substances and Disease Registry (ATSDR) prepared this book for the entire “development community”—community residents, city governments, public health departments, planners, developers, or anyone who makes decisions related to developing brownfields or land reuse sites.

What Is in This Book?

The majority of the book is a series of case studies or “success stories” showing redevelopment to achieve a variety of health-related goals: recreation/greenspace; quality, affordable housing; access to health care, community policing, and other services; education; revitalization of tribal lands; and new jobs and economic development to benefit the community (see Table 1). Each case study tells a story of how community health was successfully integrated into brownfields redevelopment and land reuse, highlighting key elements such as leadership, financing and other resources tapped, stakeholder involvement, actions taken, measures of success, and lessons learned. We suggest that you browse through the book to glean ideas from each success story that are relevant to your community's situation.

Table 1. Community Health Achievements Illustrated in Case Studies

	Recreation/ Greenspace	Housing	Community services	Schools/ Education	Revitaliza tion of tribal lands	Jobs/ Economic development
Brass Site, Kenosha, WI		√	√	√		√
Clearwater Brownfields Area, Clearwater, FL	√	√	√	√		√
Five Mile Creek Greenway, Jefferson County, AL	√					√
Highland Park, Milwaukee, WI		√	√			
Keweenaw Bay Indian Community, MI	√				√	
Menomonee River Valley, Milwaukee, WI	√		√			√
Moore Square Museums Magnet Middle School, Raleigh, NC				√		
Treasure Valley Institute for Children’s Arts, Boise, ID				√		
Yukon River Inter-Tribal Watershed Council, AK					√	

The book contains an extensive “Resources” section to help members of the development community identify funding sources, measurement tools, databases, best practices, and other resources for their redevelopment effort.

What Makes This Book Unique?

Many publications and resources are available to assist the development community with redevelopment and land reuse. Although some of these resources focus on community or environmental health, the solutions offered can be difficult or costly to implement at a community level.

ATSDR believes that anyone interested in making a substantial change to the health of their community should have all the information they need. ATSDR

developed this book for *all members* of the development community—from residents to public health officials and developers. The information contained within this book is free and publicly available and requires a minimal time commitment to use.

What Are Key Terms Used in This Book?

The people who make up the development community work in many different fields and might use certain terms in different ways. To ensure that readers of this book are on the same page, we define below a few key terms used throughout the book:

- **Public health:** Public health does not just relate to disease rates or medicine, but reflects *community health* as a



Figure 1. Steps in developing a healthy community

whole. This includes environmental, economic, medical, social, and quality of life measures.

- **Development community:** Development community describes the group of partners that should be engaged in making decisions regarding redevelopment. The development community will be unique for each project, and could include community residents, local governments, public health departments, and developers.
- **Sustainable development:** Sustainable development means using resources (e.g., land use, building practices) to meet human needs while preserving the environment, so that these needs can be met not only in the present, but over the long term. There are many ways to approach sustainable development, including preventing pollution, reducing resource consumption, reusing existing infrastructure, and promoting “green” transportation choices. Each of these approaches has public health benefits, especially when applied together.
- **Brownfields and land reuse sites:** The U.S. Environmental Protection Agency (EPA) defines brownfields as “real property, the expansion, redevelopment, or reuse of which could be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.” ATSDR broadens the definition for land reuse sites to include any site slated for land reuse, including Superfund sites.

How Can You Integrate Health Into Redevelopment Plans?

Although there is no “one-plan-fits-all” approach to integrating health into redevelopment plans, developing a healthy community usually involves five broad steps (see Figure 1). These steps do not necessarily follow a linear sequence, but it is likely that some steps will occur naturally before others. For instance, your community is likely to design a plan before starting development. Needless to say, each community is unique, and this model is meant to provide a broad illustration of probable steps along the path to developing a healthy community.

1. Organize the development community: The first step in organizing the development community is to identify individuals, groups, and agencies that are interested or already involved in redevelopment plans. Local community officials and institutions might be able to provide valuable contacts. If there is a **local health department** in your community or county, its staff will be valuable members of your development community. They might, for example, have expertise regarding particular sites and local environmental issues, and might have training and resources that are ideal for conducting community outreach.

2. Evaluate environmental and health issues: The next step is to assess the community living in and around the redevelopment site. Categories of community issues that might be

Health is “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”

—World Health Organization

considered include physical and mental health, safety and security, housing, education, and the economy. You can use the following four questions to identify measurable public health endpoints associated with redevelopment (ATSDR’s “action model”):

- » What are the issues in the community?
- » How can redevelopment address these issues?
- » What are the community health benefits of redevelopment?
- » What data are needed to measure change?

Table 2 represents an example community health evaluation which addresses these four questions.

3. Communicate risk or health issues to the development community:

Engage the surrounding community and other stakeholders to make sure they support development goals and hold information sessions to address any community questions or concerns.

4. Redesign the community with health in mind: Create and implement a design plan that incorporates community health, including medical, economic, social, and environmental health goals identified in your community health evaluation. This book illustrates a wide range of design plans, from plans for a single building to plans for an entire watershed spanning many communities.

5. Measure success—environment and health change: Measure the community health endpoints you have selected. Baseline measurements for a community just beginning redevelopment can be compared over time during redevelopment—6 months, 1 year, 5 years, or more.

What Are the Benefits of Incorporating Health Into Development Plans?

There are many reasons for the development community to consider health when redeveloping land. Some of the major ones—funding, social, and health incentives—are described below.

- **For all stakeholders—Team building:** Incorporating community health from the outset can spur the collaboration important to the success of redevelopment efforts. Brownfields redevelopment/land reuse projects can involve legal, engineering, environmental, community, and real estate matters. An interdisciplinary team, made up of specialists from a variety of fields, can generate more successful and creative solutions to the sometimes complicated problems inherent in redeveloping contaminated land. Furthermore, a work group can share responsibility, generate higher motivation, increase community participation, and connect for long-term planning.
- **For developers—Profitable results:** Brownfields redevelopment and land reuse redevelopment can be a profitable and rewarding business. The sites are frequently located in areas that have abundant and underutilized infrastructure, including highway, rail, sewer, water, gas, and electric supplies—meaning developers won’t need to spend time and money building new infrastructure. Planning healthy redevelopment with extensive input from the development community could create new business opportunities in untapped markets, and the potential for more equitable, sustainable, and profitable growth over the long term.
- **For local governments and developers—Positive publicity:** Redevelopment projects that incorporate the community’s interests are likely to be lauded by the public as prime examples

Table 2. Community Health Evaluation Example

Category	1. What are the community issues?	2. How can redevelopment address the issues?	3. What are the community health benefits?	4. What data are needed to measure change? (e.g., baseline indicators; before/after measures)
Physical and Mental Health	Lack of parks/playgrounds/green space	Build play lots; community gardens; recreational parks (basketball courts); walking trails linked to transit; bike lanes; bike parking services at bus/train stations	Improved mental health status; walk more, leading to possible reduction in obesity and other diseases; improved social interaction	Number and types of vacant property; number and use of green parcels; number of recreational parks; number of links to transit; number of bike lanes
Safety and Security	Perceived or actual high crime rate Streets are dark and uninviting	More and improved lighting; broad sidewalks; more streets (get on the grid); community watch groups; street-level homes and businesses	Feel safer and more secure; more people will use their neighborhoods (walk, be out at night); community ownership and pride increases	Crime rate; number and types of sidewalks; number of streets; number (and types) of light fixtures; reports from community watch groups
Housing	Lack of affordable housing	Build new or rehabbed mixed-use housing	Avoid gentrification; increase home ownership or stable rental home percentage	Number of affordable homes/units, percent home owner occupancy, socio-economic/demographic statistics
Education	Lack of elementary and vocational schools; high school dropout rate	Add elementary and vocational schools, with community centers/after school programs	Provide access to education and community programs, increase graduation and employment rates, reduce crime (indirect)	Number of children attending new schools, truancy statistics, graduation and dropout rates; employment and crime rates
Economy	Many vacant commercial properties; high unemployment rate	Recruit new businesses to area; hire community workers	Improve economy of area; people feel "better" with more income, less idle time; indirect reduction in crime	Number of new businesses, employment rates (from community workers), crime rates

of community and environmental stewardship. Additionally, you could face decreased opposition to a project if you show that public health concerns will be addressed. Depending on where you're developing, you could find that including health in redevelopment plans could expedite the permitting process, increase height or density limits to your development, or result in preferential treatment in selection of future projects.

- **For local governments and developers—Increased eligibility for financing:** It's no secret: acquiring, cleaning up, and redeveloping brownfield and land reuse sites can be an expensive undertaking, and funding gaps can be a significant deterrent to brownfields redevelopment and land reuse. However, a number of carefully crafted funding opportunities are available to those interested in reusing contaminated land. These include local and

federal assessment grants, revolving loan fund grants, cleanup grants, low-interest loans, grant matching incentives, infrastructure grants, and community health grants. See the “Resources” section of this book for information about these and other types of federal grants.

- ***For developers and other businesses***

—**Tax incentives:** Federal tax incentives, exemptions, and abatements could attract investments and provide a financial cushion for those interested in brownfields redevelopment or land reuse. Incentives focused on environmental cleanup and site reuse could make developing on brownfields more economically feasible.

- ***For everyone—A healthier community:*** Almost any type of redevelopment improves the condition of a community. Redevelopment that incorporates health and sustainability measures can create long-term economic, environmental, medical, and social benefits for the surrounding area and people. Depending on the scope of the project, reclaiming brownfield or land reuse sites could result in job creation, increased tax revenues, prevention or elimination of blight, reduced urban “sprawl,” increased access to quality housing and retail opportunities, and improved overall quality of life.



The Brass Site, Kenosha, Wisconsin

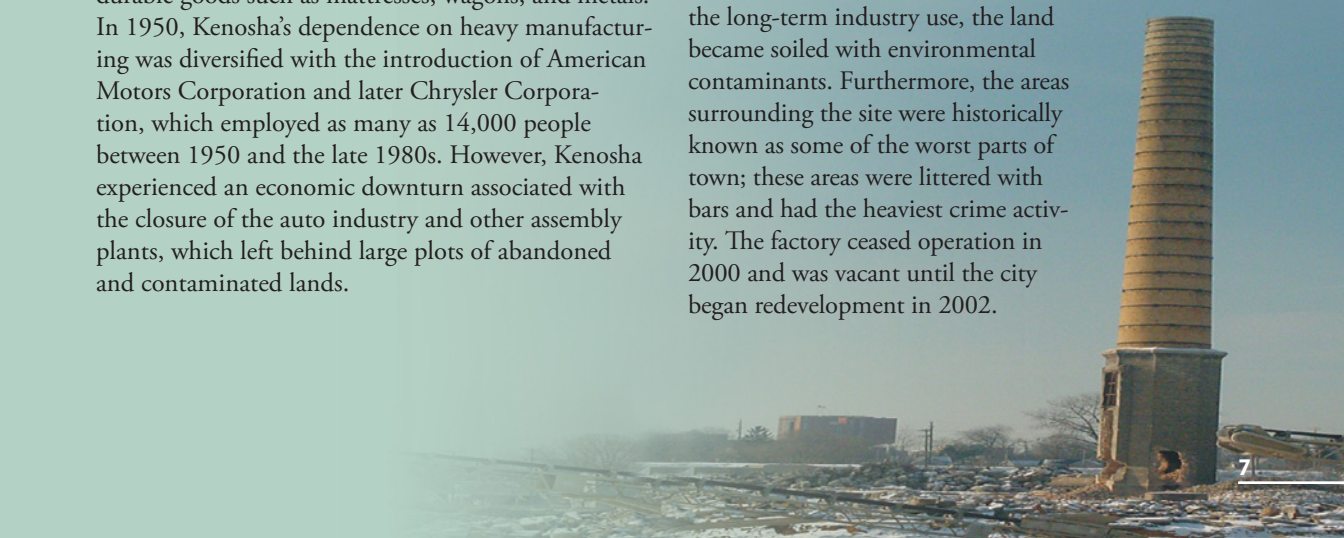
Careful Planning to Revitalize a Former Waste Site and Surrounding Neighborhoods

One of the largest abandoned properties in Kenosha was the “Brass Site,” a 29-acre urban brownfield, once home to the American Brass Company. Located in the center of the city, the site operated as a brass and copper foundry for over 100 years and employed as many as 3,000 locals. As a result of the long-term industry use, the land became soiled with environmental contaminants. Furthermore, the areas surrounding the site were historically known as some of the worst parts of town; these areas were littered with bars and had the heaviest crime activity. The factory ceased operation in 2000 and was vacant until the city began redevelopment in 2002.

Background

The City of Kenosha (population 96,000) is the fourth largest city in Wisconsin, located along the southwestern shore of Lake Michigan. Historically, Kenosha was supported by the manufacturing of durable goods such as mattresses, wagons, and metals. In 1950, Kenosha’s dependence on heavy manufacturing was diversified with the introduction of American Motors Corporation and later Chrysler Corporation, which employed as many as 14,000 people between 1950 and the late 1980s. However, Kenosha experienced an economic downturn associated with the closure of the auto industry and other assembly plants, which left behind large plots of abandoned and contaminated lands.

One of the largest abandoned properties in Kenosha was the “Brass Site,” a 29-acre brownfield once home to the American Brass Company. Located in the center of the city, the site operated as a brass and copper foundry for over 100 years and employed as many as 3,000 locals. As a result of the long-term industry use, the land became soiled with environmental contaminants. Furthermore, the areas surrounding the site were historically known as some of the worst parts of town; these areas were littered with bars and had the heaviest crime activity. The factory ceased operation in 2000 and was vacant until the city began redevelopment in 2002.



Redevelopment for the Community

By actively involving the community in the early stages of redevelopment and revitalization, planners and project leaders ensured that the project would address and improve the community's health and quality-of-life needs. By addressing community needs in the development plans, the project was shaped in a way that helped to sustain the existing community, thereby avoiding gentrification of the neighborhoods surrounding the Brass Site.



Strategic Development

Acquiring the Brass Site property was considered a feat for the City of Kenosha because private developers would prize a large piece of land in the center of the city. By controlling the property, the city was able to maintain the public's interest in the redevelopment.

Involving the Community in Long-Term Planning

Even before the American Brass Company closed, the City of Kenosha began planning for redevelopment of the area. Traditionally, the city's Department of City Development assesses a neighborhood's assets and liabilities before creating any plan for redevelopment. This helps to ensure that plans take into account the nature and needs of the redevelopment area and surrounding community. In other words, the redevelopment works *for the neighborhoods*, rather than against them. Once the redevelopment plan is drafted, the city hosts a neighborhood meeting to share plans with the community, collect community feedback, and identify people who want to actively represent the community in redevelopment over the long term.

Following this model of community involvement, the city held numerous community meetings throughout the Brass Site redevelopment process. Planning began in 1996, 4 years before the Brass Site closed—illustrating the foresight that preceded redevelopment. During the late 1990s, the city spent time speaking with the community, identifying target areas of redevelopment, and laying out different revitalization

strategies, although not much action could be taken during this time because the Brass Site property still belonged to private parties.

The first redevelopment plan was drafted in 1996 and named the Lincoln Neighborhood Plan. This initial plan provided a guide for growth and development within the neighborhoods surrounding the Brass Site. Major goals included:

- Promoting neighborhood stability.
- Increasing property values.
- Lowering residential density.
- Improving the physical character of the area.
- Providing a safe environment.
- Enhancing the locational advantages and affordability of the neighborhood.

In 2002, after the Brass Site closed and the owner agreed to transfer the property rights to the city, the Department of City Development revisited plans for the area. In cooperation with the University of Wisconsin-Extension, a partnership to connect the University of Wisconsin with local communities, the city created a follow-up plan titled "The Lincoln Neighborhood Revitalization Strategy." This document targeted the residential areas surrounding the Brass Site as a "Reinvestment Neighborhood" for extensive revitalization assistance from the city. The plan generated a list of major economic assets and challenges for the neighborhoods, along with redevelopment goals. Among the most important objectives were alternative uses for redeveloped vacant land, especially uses that would generate additional employment opportunities for neighborhood residents. The planners emphasized the importance of creating affordable housing, and hoped that all new single-family homes built in the area would be available to current neighborhood residents and employees of neighborhood businesses.

Strong Leadership as a Driver for Redevelopment

Any redevelopment effort will benefit from leaders who can provide experience and guidance to a project. The City of Kenosha was fortunate to have a group of leaders who were invested in the community. They recognized the site as the heart of the surrounding area and saw special value in preserving this part of the central city. In Kenosha, the community organizations and their leaders helped realize the vision for the Brass Site redevelopment.

Individual community members played a significant role in helping to shape the redevelopment. For instance, the alderman of the district lived across the street from the Brass Site and used her position in the city council, along with her personal connection to the community, to encourage those involved in the Brass Site redevelopment process. Other community members were involved in the three nonprofit community organizations active in the area: the Lincoln Center, the Neighborhood Housing Services Organization, and an office of the Urban League. These groups represented the neighborhoods' interest in revitalization and worked together with city government to develop and implement redevelopment plans.

One of the central city government figures was then-Mayor John Antaramian. Born and raised in Kenosha, his ties to the community were both personal and professional. In fact, when the Brass Site was transferred to the city in 2002, Antaramian had already been mayor for 10 years, and he was the area's state representative for the 10 years before that. His long-term position of standing in Kenosha helped him to leverage change at the Brass Site.

Several community members have cited Mr. Antaramian's long-standing commitment and involvement in the city as one of the major factors involved in the quick and successful redevelopment of the Brass

Site. Mr. Antaramian's approach to redevelopment was "all business"—direct and to the point. When the community identified a health or quality-of-life problem, his solution was often the most straightforward possible. For instance, if asked, "How can we increase owner-occupancy surrounding the Brass Site?" the mayor might answer, "By building more affordable single-family homes." His approach showed that there are simple, common-sense solutions to most problems in redevelopment, although the means by which these solutions are attained might be more complicated.

Nonprofit's Role in Shaping the Redevelopment Plan

After the city took ownership of the site in 2002, it contracted the Urban Land Institute (ULI), an international nonprofit organization, to work with the community to produce another detailed redevelopment plan. For \$110,000, the ULI determined what the reuse of the property should be and created an implementation strategy that would integrate redevelopment with the existing urban fabric. Over the course of an intensive 5-day session, the ULI created a plan by tackling such questions as:

- What types of commercial activity and housing are feasible?
- How will new development assist in revitalization of surrounding neighborhoods?
- Can new development provide linkages to downtown and the lakefront?
- How should development be timed, financed, and executed for best results?

One of the major issues identified by the community was the lack of local retail establishments. In response to these concerns, the ULI panel recommended that a shopping center, anchored by a mid-sized grocery store, be developed to create commercial and residential interest in the area. This shopping center would sit within a mixed-use urban village, including housing and recreational

The Brass Site Development Community

The development community for the Brass Site redevelopment project was large and diverse, made up of city officials, neighborhood groups, nonprofit planning agencies, and professional developers. Strong communication and central leadership helped this crowd work together to create significant, lasting change to the community surrounding the Brass Site.

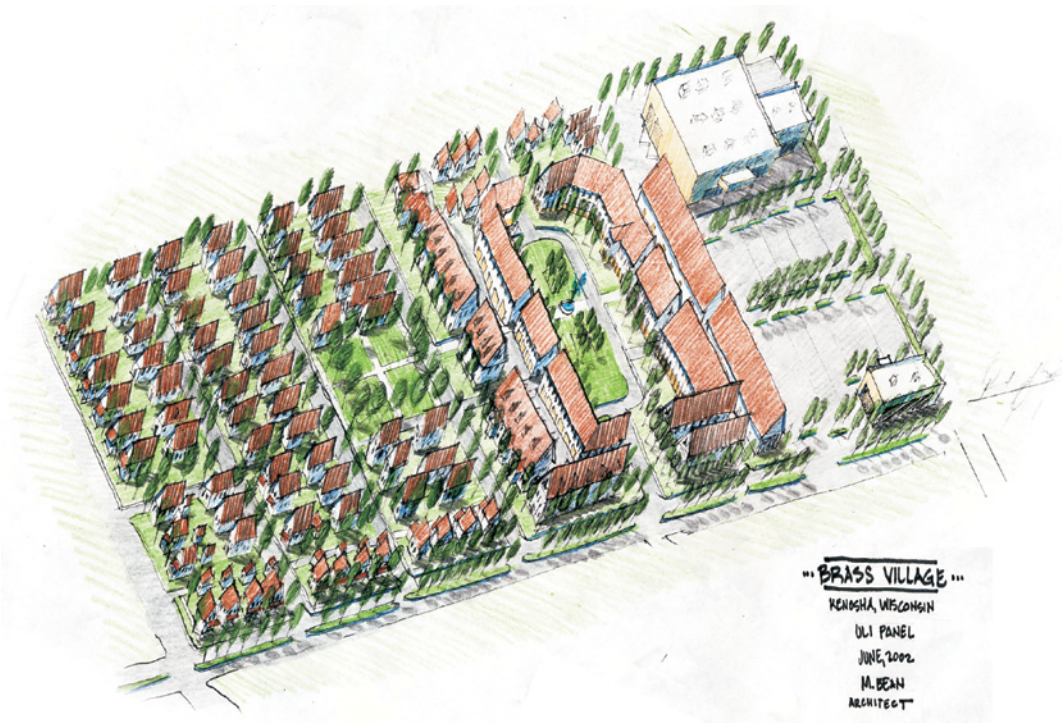


Figure 2. Brass Village Conceptual Development Model

opportunities, and would “visually link” the project to the uptown business district (see Figure 2 for an illustration). The transition from the commercial area to the rest of the Brass Site redevelopment would be secured by a village green, surrounded by attached housing. The remainder of the site would feature small, single-family homes similar in scale to the other existing properties surrounding the Brass Site.

Although the city had already drafted a number of redevelopment plans, the ULI’s involvement “sealed the deal” on business and local residents’ support of the redevelopment. Because of its credibility and strong reputation from past successful projects, ULI was able to convince a broad range of people to buy into the redevelopment plan. By building a reputation as a credible consensus-building development group, the ULI was able to inspire confidence in the community and create a plan that would suit every member of the development community.

Securing Funding: Creating a Tax Incremental District (TID) and Investing in Environmental Insurance

The Brass Site project stands out because of the unique approach used to finance redevelopment. At the outset, the City of Kenosha negotiated with the two owners of the property (Outokumpu Copper Kenosha and Atlantic Richfield Company), who together donated all properties to the city and agreed to finance about \$6 million to the project—more than half of the up-front costs of redevelopment. That funding, combined with about \$6 million from the city (comprising \$3 million in tax incremental financing, \$2 million in state grants, and \$1 million from a federal revolving loan program), provided a strong financial foundation for initiating redevelopment. In exchange for the financing, the city cleared both former owners of any responsibility for environmental issues present on the property.

Photo: credit to comc.



Before



After

Once the city acquired ownership of the property, it orchestrated a deal with the development contractor, TRC, in which the contractor would hold all three primary parties (the two former owners and the city) “harmless”—or cleared from any responsibility for environmental issues. In addition, TRC was required to pay an insurance premium to ensure that it would perform the cleanup obligation under the contract. The length of the policy is 30 years and does not have any deductibles. When that time expires, all obligations will revert to the city. The insurance covered the cleanup for pre-existing contamination, third-party claims for offsite cleanup resulting from pre-existing conditions, and remediation for known and unknown pollutants on the property.

After the city procured funding and insurance and finalized its agreements with TRC, demolition and redevelopment could begin.

Clearing the Way: Health Consultation From the Health Department and Demolition of the Brass Facility

Shortly after ownership of the property was transferred to the city, the site’s manufacturing facilities and wastewater treatment plant were demolished. During demolition, contractors removed the most highly contaminated soils from the site. The cleanup of contaminants such

as polychlorinated biphenyls, metals, and oil immediately resolved many health and environmental hazards. Additional sampling was conducted to fully characterize the degree and extent of residual contamination on the property. Results of this sampling identified volatile organic compounds, heavy metals, and polycyclic aromatic hydrocarbons as the primary contaminants of concern.

In 2004, TRC asked the Wisconsin Department of Health Services (DHS) for assistance with both the remedial action and redevelopment plans for the Brass Site. TRC asked for general guidance on how the plans should be developed to ensure that all human health concerns about the potential for vapor intrusion would be addressed. At that time, DHS suggested four general methods for addressing the vapor intrusion potential and protecting public health:

- **Source remediation/removal:** Evaluate the amount of cleanup or removal needed to remove the contaminant source, and take action.
- **Building location/orientation:** Locate buildings on the cleanest part of the property.
- **Barriers to migration:** Create barriers to subsurface vapor migration by sealing subsurface migration pathways along utility lines, providing preferential flow routes away from buildings, or a combination of the two.

What is Tax Incremental Financing (TIF)?

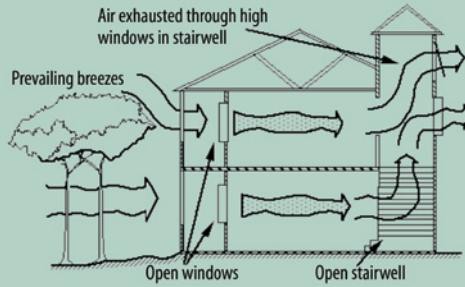
Tax incremental financing (TIF) allows cities and villages to recover costs such as construction, demolition, financing, land acquisition and assembly, relocation, public improvements, environmental remediation, or site preparation through new taxes generated from private development. In 2002, the City of Kenosha created a TIF to recover incremental taxes as a result of new development of the Brass site and the adjacent neighborhood. This provided about \$3 million in funding to the Brass Site development.



What is Vapor Intrusion?

Buildings are natural chimneys. There is a natural tendency for air to move up through buildings because:

1. Wind speed increases with height
2. Objects in the wind experience a lift force at the tail end
3. Solar radiation occurs on the roof
4. When the interior of a building is heated, the air inside moves up and out to the cooler air



Therefore, a sealed building will actually draw air up through the cracks in the floor. If there is a positive pressure of vapors in the soil, the path for those soil vapors is into the building. Buildings with basements or un-vented crawl-spaces tend to have greater infiltration.

This problem is often most severe when a building is sealed and heated and the ground outside is frozen. The soil vapors cannot press through the frozen ground, so they find the easiest path into the building. Subsurface ventilation provides the easiest path to prevent exposures. The subsurface system is analogous to a closed fireplace with a chimney: the vapors come from the source through a tube and above the building. As with a closed fireplace, no vapors enter the building as long as the chimney is in tact. Like a chimney, even if there is a breach in the system, it will still prevent vapors from entering the building as long as the pressure gradient is greater above the building than it is into the building.

- Incorporating migration with building design: Design building features that prevent chemical vapors from entering buildings.

In 2005, TRC and the Wisconsin Department of Natural Resources (DNR) asked DHS to prepare a Health Consultation on contaminants found at the Brass Site, under cooperative agreement with ATSDR. The document reviewed remediation alternatives and known contamination to ensure that redevelopment would protect public health. DHS concluded that the proposed remediation along with the redevelopment plan prevented the migration of chemical vapor intrusion into buildings, and was therefore protective of public health.

Affordable Housing Improves Community Health

Studies have shown that quality,

affordable housing might improve physical health by freeing up family resources for nutritious food and health care, and limiting exposure to allergens, neurotoxins, and other dangers associated with poor quality housing.¹ Better housing can result in reduced crime rates and an increased sense of pride in the community, all of which can improve residents' overall quality of life.

In Kenosha, one of the city's primary goals in cleaning up the Brass Site was to enable sustainable redevelopment of both the site and the surrounding neighborhoods. Developers of new housing and infrastructure often face the difficult challenge of maintaining the integrity of neighborhoods, while keeping home prices affordable.

As previously discussed, the city provided funding through TIF resources to help some homeowners renovate their properties and bring their houses "up to code."

¹ Center for Housing Policy, 2007. The Positive Impacts of Affordable Housing on Health: A Research Summary. www.nhc.org/pdf/chp_int_litrvw_hsglth0707.pdf



With federal Community Development Block Grant (CDBG) and HOME funding, the city was able to construct 20 affordable single-family homes in the neighborhoods adjacent to the Brass Site, and demolish eight blighted properties. To ensure that the area would avoid gentrification, the new houses were built in scale to the other existing properties surrounding the Brass Site.

Since the development of new homes and removal of blighted properties, homeownership in neighborhoods surrounding the Brass Site has increased, and crime rates have dropped almost 50 percent. From 2001 to 2006, the average assessed value of residential property in the neighborhoods surrounding the Brass Site has increased about \$70,000 to more than \$100,000. The mayor noted that a key element of the residential redevelopment was bringing residents of the surrounding neighborhoods into the design process.

Current Conditions and a Bright Future

Developers have closely followed the ULI conceptual plan. The grocery store,

bank, parking lot, and mixed-use residential and commercial building have all been constructed. An elementary school has been built along the edge of the redevelopment area. In response to the school and retail attractions in the area, there has been a notable increase in the area's vehicular traffic. To account for the increase in cars on the road, the city has expanded the highway and local roads. The city plans to install traffic-calming devices such as crosswalks and traffic lights to protect pedestrians. There are plans to install an electric streetcar that will run through the center of the boulevard, to decrease the number of cars on the road and to slow existing traffic. However, because of the downturn in the local and national economy, additional development at the site and surrounding areas has been temporarily postponed.

The employment opportunities in the area surrounding the Brass Site have not yet been fully realized because of the current economy. However, the City of Kenosha continues to acknowledge the potential for retail and job growth in the area—and anticipates that, with

Health Impacts of the Brass Site Redevelopment

- Increased affordable housing, property values, and owner-occupancy rates.
- Lowered the crime rate.
- Increased access to grocery stores and fresh food.
- Reduced exposure to industrial contaminants.
- Provided potential employment opportunities.



Watering the Food Desert: Construction of a Full-Service Grocery Store

Some studies suggest that communities with limited or non-existent access to grocery stores and fresh food might have an increased rate of chronic adverse health effects (for example, see researcher Mari Gallagher's 2006 report, *Examining the Impacts of Food Deserts on Public Health in Chicago*, www.marigallagher.com/site_media/dynamic/project_files/Chicago_Food_Desert_Report.pdf).

One of the major issues identified by the community during the planning stages of development was the lack of a full-service grocery store. The city of Kenosha responded to the need for a grocery store in the simplest way possible: they built one.

The construction of the Pick 'n Save in the older, central neighborhood of Kenosha represented a significant accomplishment, because most new grocery stores are constructed in city outskirts, rather than more central locations. Today, the store attracts residents from the surrounding downtown neighborhoods, and provides people with convenient access to fresh, wholesome foods.



an upturn in the economy, jobs and additional development will return to the area.

To address contamination and public health risks, much of the land over the former Brass Site has been “hard-scaped,” or covered in wood, pavement, and potted vegetation. This ensures that the public will not be exposed to residual contaminants in the soil.

In a study of “indicators,” or measurements, tracked from 2001 to 2006, some neighborhoods surrounding the Brass Site saw decreased crime rates, increased owner occupancy rates, and increased property values—among other positive changes. Needless to say, the Brass Site Development Community has made great strides over the last few years, and the surrounding areas have realized significant quality-of-life and health benefits from the demolition and redevelopment of the brownfield.

Lessons Learned

- **Communicate:** Communicating with the community is essential in determining how best to meet their needs, and reassures residents that the city is working for the community. Before involving outside organizations such as the ULI, Kenosha officials showed that it is important to “start priming the pump and developing stakeholder networks or organizations” within the community. By building such a network and trust, a partner can establish credibility, which increases the likelihood that plans will be approved and supported by the local community.
- **Network:** Depending on the type of development being planned, redevelopment of a brownfield site can be tricky. To help a project build momentum, encourage grassroots supporters from the surrounding community as well as high-level administrators to buy in to the project idea. The type of leadership and networking capabilities

of a thoughtful administrator can help propel the project plans into a reality, as it did at the Brass Site.

The City of Kenosha consulted and depended on the contributions of a diverse development community. Community groups contributed to the initial development plans, former land owners were solicited for financial support, the ULI steered the plans to develop consensus, and developers carried out the major work on infrastructure. The city devoted much of its efforts to facilitate cooperation among the disparate groups. Make sure that major steps in new projects make all parties feel as though they have been heard and included.

- **Work against the market:** When the economy fluctuates, so do property prices. Try to take advantage of discounted prices on promising redevelopment properties when the real estate market is down.
- **Be brave:** Investing in brownfields and land reuse sites can be intimidating because of the “unknown” factors underlying environmental contamination. Daunting questions include, “How much will the redevelopment cost? Why make the investment in used land when I could work off of new land instead?” But sidestepping the problem will not make brownfields simply vanish. In Kenosha, determined planners made the bold moves necessary for successful revitalization.

Resources for More Information

Urban Land Institute (ULI) Report on the Brass Site

A brief summary of the role of the ULI on Brass Site redevelopment. The parent site (www.uli.org) also describes the work of ULI worldwide.

<http://www.uli.org/ResearchAndPublications/Magazines/MagazineArchives/Urban-Land/2004/July/A%20Redevelopment%20Plan%20for%20the%20Brass%20Site.aspx>

Wisconsin Society of Professional Engineers

A briefing put together by the Wisconsin Society of Professional Engineers on the Frost Manufacturing Facility in Kenosha, a blighted site that is part of the revitalization occurring along the periphery of the Brass Site.

www.wspe.org/PDF/2004-03_EP.pdf



Clearwater Brownfields Area, Clearwater, Florida

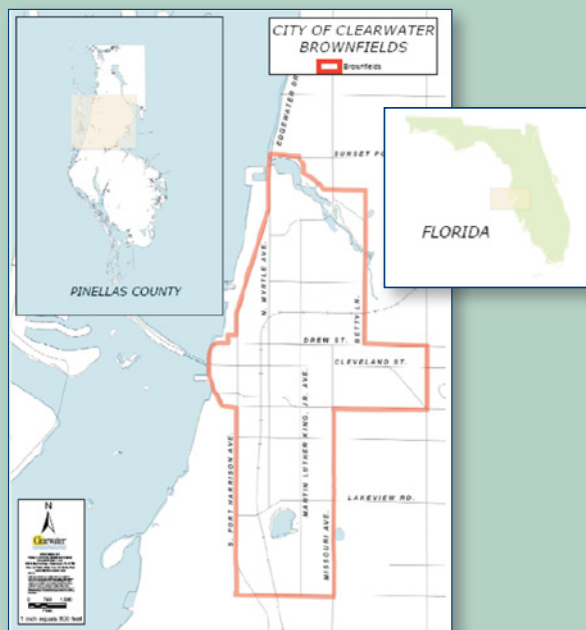
Community Involvement Leads to Community Health

The experience of Clearwater, Florida, over the past decade provides lessons especially valuable for city government, community groups, and other nonprofits. The city committed to a process in which the re-development agenda was set, in large part, by the residents themselves. Public health was a priority from the outset, resulting in a community health center, ecosystem restoration of a polluted creek, new police and fire stations, recreation and open space, new jobs, and affordable housing.

Background

The City of Clearwater (population 110,000), located in Pinellas County on Florida's west-central coast, was once the center for canning, packing, and shipping of citrus fruits grown in the region. Historically, tourists and settlers were drawn to the area because of the climate. Downtown Clearwater was once a thriving business center. However, the city experienced an exodus of businesses from the area in the past 30 years, leaving behind abandoned lands contaminated by former gas stations, drycleaning facilities, print shops, and other entities.

In 1997, the Clearwater Brownfields Area (CBA) became the first state-certified brownfields area in Florida. The CBA covers 1,800 acres, which includes former wetlands filled in more than 40 years ago for urban development. The CBA contains approximately 220 potentially contaminated industrial, commercial, and residential sites.



What Is Environmental Justice?

Environmental justice means the fair treatment and meaningful involvement of all people, regardless of race, ethnicity, culture, income, or education level, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no population, on the basis of political or economic disempowerment, is forced to shoulder the negative human health and environmental impacts of pollution or other environmental hazards.



About 10 percent of Clearwater residents live in the CBA, and approximately 45 percent are minorities. Residents have experienced job loss, declining property values, and other social ills resulting from urban decline. About 27 percent live in poverty, as many as 9 percent are unemployed, and the area accounts for more than 60 percent of the city’s crime.

A Pioneering “Environmental Justice Plan”

In 1996, Miles Ballogg, Clearwater’s Environmental Specialist and Brownfields Coordinator, applied for and received an EPA Regional Assessment Pilot grant (see “Resources for More Information”). The city used this grant to assess a 14-acre site once occupied by a department store’s automotive center.

As the city’s brownfields program developed, Ballogg recognized the need for the program to respond to the concerns of residents and community leaders in the CBA. “After all, who has more historical knowledge of what has been there,” he notes, “and who cares more about the community than the people who live there?”

To this end, Ballogg set out to bring together residents, community leaders, and city officials to create an “Environmental Justice Plan and Action Agenda.” This plan would provide the framework for brownfields redevelopment in the CBA. He obtained the support of the International City/County Management Association (ICMA), including a \$35,000 EPA-funded technical assistance grant. That support paved the way for two local universities—the University of South Florida and Florida Agricultural and Mechanical University—to lend their expertise to the effort. Local social service organizations formed an informal association to promote community involvement. A research team consisting of individuals from the participating universities,

neighborhood groups, city government, and ICMA used a variety of avenues—open forums, home-based gatherings, surveys, interviews, meetings with city officials—to collect input for the Environmental Justice Action Agenda (the Action Agenda).

During the first community forum held in February 1999, residents (primarily from the North and South Greenwood neighborhoods) identified 42 items important for addressing community health concerns in the CBA. The research team grouped these into five action items:

- **Action Item 1:** Enhance awareness of brownfields.
- **Action Item 2:** Improve the community’s access to information.
- **Action Item 3:** Ensure community participation in decision-making.
- **Action Item 4:** Develop the economic base of the brownfields area neighborhoods.
- **Action Item 5:** Create a healthy and safe environment in the CBA.

A subsequent community forum discussed strategies for achieving each of these action items, which formed the Action Agenda. (See page 20 for an Action Agenda excerpt that shows the implementation strategies for creating a healthy and safe environment in the CBA.)

In September 2000, the Clearwater City Council approved the Action Agenda, making it the first environmental justice plan in the nation to be approved by a city government.

Realizing the Vision

Participants in the planning process recognized that the Action Agenda was a “living document.” The Action Agenda has, indeed, lived on. The city has leveraged the initial \$100,000 EPA grant into more than \$2.6 million in EPA brownfields grant funding, and an additional \$6.7 million from other federal and state

sources. With these resources, brownfields assistance has gone to more than 70 private sector projects and 17 community projects, bringing more than 1,000 new jobs and more than \$250 million in capital investment to the area. But the benefits have not been only economic: consistent with the Action Agenda, brownfields redevelopment has improved health, the environment, and quality of life for residents as well. Some of these achievements are highlighted below.

From Abandoned Gas Station to Community Health Center

Brownfields redevelopment in Clearwater has directly benefited the health of residents of North Greenwood, one of Clearwater's poorest neighborhoods. Beginning in 1995, Mrs. Willa Carson, a retired nurse, had run a free community health center out of two refurbished apartments in North Greenwood, using services donated by nurses and doctors. Her mission was to provide free, quality health care to uninsured and underserved residents of the community.

In the center of the North Greenwood neighborhood was a rundown, abandoned gas station, saddled with property liens. Residents of North Greenwood determined that the site would be an ideal location for Willa Carson's clinic. The city obtained \$150,000 in State Brownfields Redevelopment appropriations to clear the property title and resolve liens. The same resources were used to remove underground storage tanks and hydraulic lifts and remove 450 tons of contaminated soil. Community Development Block Grant funding was acquired to demolish the rundown structure. Because the project addressed health issues, \$300,000 in Florida State Tobacco Settlement funds were appropriated to construct a new health care facility.

In January 2001, the 3,200-square-foot Willa Carson Community Health Resource Center opened, complete with three examination rooms, a reception area, a triage area, a pharmacy area,



Timeline of Greenwood Neighborhood Community Forums

- **January 10, 1999.** This initial forum was held to discuss with the city staff, the city manager, and the assistant city manager the need to develop an Environmental Justice Action Agenda.
- **February 4, 1999.** The first community forum yielded 42 items that the community found important and relevant to environmental justice in the CBA.
- **March 8, 1999.** This forum was held to brainstorm the feasibility of environmental justice goals and strategies as identified by the community. The forum was also used to seek new ideas from the city staff.
- **March 22, 1999.** The second community forum resulted in the creation of the Planning Action Team. With the help of the community, the research team coalesced the 42 items into five goals.
- **May 24, 1999.** The third community forum was held to discuss strategies to achieve each of the five goals.
- **May–June 1999.** A survey was conducted in order to gauge community awareness of brownfields and environmental justice issues. The results were incorporated into the Action Agenda.
- **June 16 & 17, 1999.** Two “brainstorming” sessions were hosted by community members and led by the research team. Community members expressed their need for more comprehensive brownfields education and to know more about the city's development plans for some of the sites.
- **July 17, 1999.** A community forum by the Center for Public Environmental Oversight was held to develop and deliver an educational module to the residents of the CBA.
- **September 11, 1999.** The final forum with the community and the city staff was held to finalize the draft of the Environmental Justice Action Agenda.

Excerpt from City of Clearwater Environmental Justice Action Agenda

Action Item 5: Create a Healthy and Safe Environment in the Clearwater Brownfields Area

5a. Make the restoration of Stevenson's Creek a priority. Stevenson's Creek spans over an area that is larger than the brownfields area; however, it is important to realize that the restoration of the creek is an environmental justice issue for the residents of the brownfields area.	
Implementation Strategies: City of Clearwater	Implementation Strategies: Brownfields Area Neighborhoods
<p>Make the Environmental Advisory Board responsible for all issues related to the restoration of Stevenson's creek.</p> <p>Establish a strong and direct link between the Environmental Advisory Board and the Brownfields Advisory Board.</p> <p>Implement the Watershed Management Plan.</p> <p>Involve the affected community in decision making regarding the creek by including them in planning and decision making.</p> <p>Aggressively seek funding to restore the creek.</p> <p>Develop preventive measures to maintain the quality of the creek.</p> <p>Share the information and facts with the public.</p> <p>Establish a strong link with the Pinellas Health Department to address any health issues related to the creek.</p>	<p>Work cooperatively with the city to find funding for the rehabilitation of Stevenson's creek.</p> <p>Partner with the city to look for available funding sources.</p> <p>Obtain information on the status and causes of the current conditions of the creek.</p> <p>Serve or find representatives to serve on planning and decision-making committees.</p> <p>Participate in the development and enforcement of the Watershed Management Plan.</p>
5b. Address health issues associated with lead exposure, if any, in the brownfields area.	
Implementation Strategies: City of Clearwater	Implementation Strategies: Brownfields Area Neighborhoods
<ul style="list-style-type: none"> • Partner with the Pinellas County Health department in assessing exposure to certain environmental contaminants. • Direct citizens, via the newsletter or the web page, to proper sources regarding any information and known health risks in the brownfields area. 	<ul style="list-style-type: none"> • Report concerns about exposure to environmental contaminants to the Pinellas County Health department. • Avail the services of the Pinellas County Health department on lead testing.
5c. Assist the community in obtaining information about contamination levels of "Regulatory Listed Brownfields Sites."	
Implementation Strategies: City of Clearwater	Implementation Strategies: Brownfields Area Neighborhoods
<p>Continue to provide training to city employees to create awareness of the multiple needs of the community.</p>	<p>Continue to become educated about such linkages to understand the workings of the city's strategies and policies regarding redevelopment.</p>
5d. Continue to educate city employees about the linkage between the environment, planning, and economic development	
Implementation Strategies: City of Clearwater	Implementation Strategies: Brownfields Area Neighborhoods
<p>Serve as a liaison between the community and the agencies that provide information on "Regulatory Listed sites."</p>	<p>Contact the various agencies that can provide information about the sites.</p>

and meeting space for educational and community activities. Up to 7,000 community residents each year have received free bilingual health care, including immunizations; tests and screenings; flu shots; and counseling about lead screening, breast cancer examination, nutrition, managing diabetes, and other health-related topics.

Other communities in Florida might be able to replicate Clearwater’s success in using brownfields redevelopment to improve access to health care for underserved residents. On June 30, 2008, Florida Governor Charlie Crist signed into law House Bill 527, which provides a state tax credit incentive to encourage the construction of clinics and other health care facilities on brownfields sites to serve the public health and medical needs of local communities. This legislation, the first of its kind in the nation, could serve as a model for other states in the future.

From Abandoned Gas Station to Neighborhood Police Station and Family Center

Another abandoned gas station, this one in the South Greenwood neighborhood, had become an eyesore and a site for drug-related activities and other crimes. A homeowners group called the South Clearwater Citizens for Progressive Action took the initiative to gain control of the property on behalf of the neighborhood. Residents, government agencies, and private sector entities worked together to transform the crime-ridden corner—including securing a \$224,527 “Safe Neighborhood” grant from the U.S. Department of Housing and Urban Development (HUD).

On January 15, 2000, a new 5,000-square-foot complex opened on the site. The complex is home to the South Greenwood Neighborhood Police Substation, staffed by a patrol sergeant and five community-oriented patrol officers.



Before



After



It is also home to the Foundation Village Neighborhood Family Center, which provides after-school care for children, adult education classes, and support programs for community residents.

From Junkyard to Fire Station and Creek Restoration

A 5-acre junkyard operating on the banks of Stevenson Creek for more than 40 years was a blight in the neighborhood, as well as a source of metals, solvents, and petroleum

pollution in the creek. Cleaning up the junkyard and constructing a new fire station in its place could serve two purposes: improving inadequate fire and emergency response times in the neighborhood, and contributing to the restoration of Stevenson Creek—a key priority of the Action Agenda.

The city used EPA brownfields funding for site assessment and monitoring, and funds from “Penny for Pinellas,” a local option sales tax, for construction of the

Stevenson Creek

Stevenson Creek is a 3-mile tidal creek running through the heart of North Greenwood. It once had good water quality and abundant birds, fish, and other wildlife. During World War II, however, much of the estuary was filled for development. Today the estuary is half of its original size, and the surrounding land is more than 90 percent developed. Historic flood plains are gone, so during heavy rains, water has nowhere to go and homes are flooded. Much of the river is filled with foul-smelling muck and pollution from septic systems, stormwater discharges, and open drainage ditches. The teeming populations of birds and fish are a thing of the past.

For two decades, residents have lobbied the city through letters, petitions, and meetings to restore the creek. In 2005, this effort began to come to fruition: the city completed a \$35-million master plan to prevent flooding, clean up pollution, and restore wildlife

habitat. Funding of \$5 million under the federal Water Resources Development Act will allow the U.S. Army Corps of Engineers (Corps) to conduct ecosystem restoration work in the creek, including dredging, disposal of muck, and construction of mangrove creation areas. The Corps’ environmental assessment report for Stevenson Creek notes that brownfields restoration efforts such as cleaning up the junkyard on the creek banks “will only complement the Corps’ restoration initiatives.”





fire station. To prevent contaminated vapors from entering the site, the project included a protective fill cover, vapor barriers, and a monitoring well in the fire station bay. Station 51, a \$3-million facility staffed with a lieutenant, driver operator, and fire medic, opened in August 2004.

From Dilapidated Housing to Neighborhood Renaissance

Built in 1959, Greenwood Apartments in the North Greenwood neighborhood had fallen into disrepair. The 200 units were full of code violations and safety hazards, including asbestos and lead. Its absentee owner had done virtually no maintenance in 40 years.

Recognizing the great need for decent, safe housing in the area, Clearwater Neighborhood Housing Services worked for several years to acquire the complex and renovate it for low-income tenants. The \$14-million project was financed through bonds, loans, tax credit equity, development fees, and grants, including a brownfields grant. Over 14 months, lead and asbestos were remediated and interiors and exteriors were completely remodeled. Key to this success was a partnership with Bank of America, which stepped in to help renovate the complex. The bank funded the “Make a Difference Center” at the apartments, with a computer lab, library, playground, and laundry facilities.

The redevelopment of the Greenwood Apartments has helped spur a renaissance in the area. The city has constructed a library and a state-of-the-art fitness facility nearby, and has enhanced neighborhood main streets with landscaping, streetlights, and improvements for pedestrians.

For its work in “affordable housing preservation,” the Clearwater Neighborhood Housing Services received the prestigious \$50,000 “Maxwell Award of Excellence” from the Fannie Mae Foundation.

Lessons Learned

Clearwater’s experience since 1996 has yielded several key lessons about how best to integrate public health into brownfields redevelopment:

- **Take a comprehensive approach to brownfields redevelopment to meet the community’s needs:** Local governments can employ brownfields redevelopment as a tool for addressing community needs in a “holistic” way—whether that means providing safe and affordable housing, better health care and public services, a healthier environment, or expanded recreational opportunities, or addressing any other community health concerns. Clearwater’s experience shows that brownfields funding can serve as a steppingstone to bring in other

EPA Brownfields Grant Promotes Community Health in Clearwater

In 2007, the City of Clearwater received an EPA brownfields assessment grant of \$400,000. The grant funds have been used to conduct environmental site assessments, develop quality assurance project and health monitoring plans, and conduct community outreach at sites with hazardous substance and petroleum contamination.

Health Impacts of the Clearwater Brownfields Area Redevelopment

- Provided free, quality health care for residents.
- Improved public safety and welfare with a new police station, fire station, and family center.
- Developed affordable housing.
- Created new jobs.
- Contributed to restoration of a polluted creek.



federal and state resources, as well as support from the private sector.

- **Engage a broad spectrum of stakeholders, early and often:** Enlist the expertise and support of community leaders, nonprofit groups, local colleges and universities, staff in the local public health department and other city offices, private sector entities, and others who have a stake in the outcome and success of the project. Their buy-in and input from the beginning can make the difference in creating a vibrant, meaningful program.

Clearwater's initial stakeholder process primarily involved community members, nonprofit groups, and city staff. The brownfields program director reflected that more private sector representation would have further strengthened that effort.

- **To understand how to deliver benefits to the community, solicit the perspective and knowledge of the community:** Miles Ballogg, Clearwater's first brownfields coordinator, attributes much of the success of the program in improving public health to the community-driven Action Agenda. The goals and strategy set in the initial community meetings in Clearwater have led to substantial advancements in community health in Clearwater, and have continued to garner substantial support and resources more than a decade later.
- **A "point person" or small group who can serve as coordinator, facilitator, and advocate for local brownfields redevelopment is invaluable:** This individual or group can bring together the multiple aspects of brownfields redevelopment—cleanup, infrastructure, economic development, public health, education—so that these aspects can complement, rather than compete with, one another. In Clearwater, the brownfields coordinator facilitated relationships among a wide range of stakeholders, especially community members, nonprofit organizations, and city staff, giving an effective voice in the process to all the parties involved.

Resources for More Information

City of Clearwater Brownfields Program

Information and resources about the city's brownfields redevelopment efforts.

www.myclearwater.com/green/brownfields.asp

Florida Brownfields Association

A nonprofit, volunteer, service organization dedicated to assisting in the advancement and implementation of the Florida and National Brownfields Redevelopment programs.

www.floridabrownfields.org

Florida Brownfields Redevelopment Program

Information about the State of Florida's brownfields program.

www.dep.state.fl.us/waste/categories/brownfields/default.htm

International City/County Management Association. *Righting the Wrong: A Model Plan for Environmental Justice in Brownfields Redevelopment.*

A 2001 guide for local governments and community groups in developing a strategic process to address brownfields and environmental justice issues, based on the experience of Clearwater.

http://bookstore.icma.org/product1.cfm?DID=7&Product_ID=597



Five Mile Creek, Jefferson County, Alabama

Converting Brownfield Sites to Greenspaces for Community Health and Recreation

A vibrant partnership, with strong community participation, is working to transform a blighted watershed into an attractive destination for running, hiking, horseback riding, canoeing, and kayaking during all the seasons of the year—affording residents and visitors recreational and exercise opportunities of proven benefit to physical and mental health. Brownfields redevelopment and land reuse is helping to establish the framework for a 28-mile greenway system—a “String of Green Pearls.” This case study might be particularly helpful to groups looking to form inter-governmental partnerships over broad areas, or developers and planners who want to create recreational greenspaces.

Background

Five Mile Creek—despite its name—is a 45-mile waterway flowing through seven cities in Jefferson County, Alabama. Its watershed drains 78 square miles. The abundance of coal, iron, and limestone deposits, along with a plentiful supply of fresh water, made the region a center for iron and steel manufacturing, coal mining, and coke production. By the early 20th century, acid mine drainage and other industrial contaminants had made Five Mile Creek—dubbed “Creosote Creek” because of its chemical odor and slick sheen—one of the most polluted waterways in Alabama.

Federal and state regulations enacted in the 1970s decreased industrial pollution, but residual acid mine drainage continued to plague some parts of the watershed. Meanwhile, technological advances and a decline in U.S. steel production led to decreased demand for coal mining, coke processing, and other

related industries. As a result of this decreased demand on the industries, substantial amounts of contaminated and exploited land were simply abandoned by property owners. The cities within the Five Mile Creek watershed struggled to survive economically—in no small part because of the negative reputation of “Creosote Creek.”

Paradoxically, while local businesses suffered, the nearby city of Birmingham continued to grow. As industry and mining declined, the region faced other environmental strains from the encroaching city—suburban development, deforestation, dredging, and channeling of drainages. As a result, the watershed faced greater stormwater runoff, streambank erosion, and flooding. Floods in Five Mile Creek were sometimes powerful enough to carry 18-wheeler truck trailers down the creek. Severe storms led to scoured banks, damaged wildlife habitats, loss of property, and damage to industry and businesses in the floodplain.



Figure 3. Tires littering the bed of Five Mile Creek

Greenways are corridors of undeveloped land, usually in an urban area, which are set aside for recreation and/or conservation. Greenways usually follow natural features, such as ridges or streams, or parts of the human landscape, such as abandoned railways or canals. Greenways benefit communities by protecting land and wildlife and providing pedestrian and bicycle facilities for recreation and transportation. Similarly, blueways are water trails that provide opportunities for water-based recreation, such as canoeing and kayaking.

The remains of the former industry, as well as massive amounts of tires from creekside junkyards, would work their way down the creek—littering the banks and bed (Figure 3).

In March of 2000, flooding in the watershed led to devastating consequences. A flash flood damaged property and threatened the lives of residents in a mobile home park in the City of Tarrant, a working class suburb northeast of Birmingham. Tarrant’s Fire Chief, William Hewitt, had often been called to rescue people from trees during floods. After this especially destructive flood, he began to look for ways to convert the flood-ravaged area into a new city park. To start, Hewitt turned his attention to the demolished mobile home park. Later that year, Tarrant officials purchased the 16-acre site using Federal Emergency Management Agency (FEMA) flood mitigation funds. The town had made the initial steps toward revitalization.

Around the same time, Wendy Jackson of the Freshwater Land Trust was working to acquire 588 acres along the creek

as part of the Jefferson County Greenways Program, an effort designed to protect corridors of land along area rivers and streams. A chance meeting between Hewitt and Jackson led to an innovative partnership of local leaders determined to transform “Creosote Creek.” They envisioned developing a network of greenways—such as trails, parks, canoe launches, and other greenspaces—along the creek, thereby creating a “String of Green Pearls.”

A Groundbreaking Intergovernmental Partnership

In April 2002, the Regional Planning Commission of Greater Birmingham (RPCGB) convened an informal stakeholder meeting at Tarrant City Hall. In addition to RPCGB, participating organizations included:

- **The Freshwater Land Trust:** An Alabama conservation organization focused on land acquisition and preservation along rivers and streams.
- **Lehe Planning:** A private consulting firm working on several flood mitigation projects along the corridor.
- **The Cawaco² Resource Conservation and Development (RC&D) Council:** A nonprofit involved in watershed partnerships to identify and remediate environmental problems in the area of the Cahaba, Warrior, and Coosa Rivers.

During this first meeting, participants discussed their projects and activities along the waterway, and how they could coordinate their work as part of a long-term plan for greenways. Results of this meeting identified a core group of primary stakeholders.

The informal group of stakeholders met again for a second time in early May. At this meeting, the group discussed the importance of leveraging grant funding from state and federal levels. After the Land Trust made the suggestion of

² “Cawaco” stands for the “Cahaba, Warrior, and Coosa Rivers.”

starting a formal group, the stakeholders began embracing the idea of forming a partnership that met regularly to coordinate projects—thus, the Five Mile Creek Greenway Partnership (The Partnership).

Days after the group of stakeholders established objectives for their new partnership, seasonal floods once again threatened Tarrant. The flooding served as a reminder of the need for long-term solutions to the interrelated problems of flooding, pollution, and debris along the waterway. To address these ongoing issues, the group continued to meet regularly throughout May. By June of that year, the RPCGB had written up a groundbreaking intergovernmental agreement that formally established the purpose and scope of the Partnership (see box, “Purpose and Scope of the Five Mile Creek Greenway Partnership”). Signatories to the agreement included the mayors of six cities (representing a combined population of 340,000) along Five Mile Creek—Center Point, Tarrant, Fultondale, Birmingham, Brookside, and Graysville—as well as representatives of the Jefferson County Commission, the Freshwater Land Trust, Cawaco, and RPCGB. The region’s two members of the U.S. House of Representatives and two U.S. Senators also pledged their support.

From an Active Stream to Streaming Action

Seasonal flooding occurred regularly from 2001 to 2003, creating long-lasting interest and concern about the condition of the creek. In February 2003, the Alabama Department of Environmental Management (ADEM) changed Five Mile Creek’s usage designation from the lowest level of protection (“Agricultural and Industrial”) to levels protective of “Fish and Wildlife.” The new designation set water quality standards to protect existing species in the waterway, and greatly reduced the amount of toxic substances that could be legally



Purpose and Scope of the Five Mile Creek Greenway Partnership

From the Intergovernmental Agreement Establishing the Five Mile Creek Greenway Partnership, June 2002

The purpose of the Five Mile Creek Greenway Partnership is to promote and facilitate coordinated and cohesive planning, development, and maintenance of a network of greenways, parks, trails, and points of interest along the Five Mile Creek Corridor.

This greenway system will enhance the quality of life for citizens and visitors by striving to:

- Provide safe and efficient alternative transportation linkages between recreational sites, open spaces, residential areas, employment centers, educational and cultural facilities, and other activity centers.
- Encourage citizen wellness and promote opportunities for recreational activities.
- Protect environmental assets and retain and restore beneficial ecological habitats.
- Maintain a contiguous urban forest ecosystem to reduce region-wide environmental problems such as flooding from excessive stormwater runoff, water pollution, air quality degradation resulting in non-attainment status, human health hazards, and urban climate change.
- Reclaim abandoned industrial, commercial, and residential properties such as “Brownfields.”
- Promote an appreciation for Five Mile Creek’s natural, historical, and cultural heritage and that of its neighborhoods.
- Protect and link substantial remnants of the various communities’ undeveloped open spaces, woodlands, and wetlands.
- Enhance the aesthetics along the corridor to encourage tourism, promote economic development, and improve the living environment for residents.

“The Five Mile Creek story is one of the best I’ve seen in 16 years of working for river conservation. Often these projects happen on scenic rivers that have biological significance, running through affluent communities. Here, people started with nothing—no biodiversity, a stinky creek full of trash from floods, underserved communities with big economic challenges. All they had was each other. And the mayors decided that what was good for one community was good for all the communities. . . leveraging their six voices into one. You can’t underestimate people who have the willingness to come together and get something done.”

—Wendy Jackson, Freshwater Land Trust

“ . . . [T]hese are not towns with deep pockets in search of a project to eat up the budget surplus. They are small towns whose leaders simply want to build a legacy for future generations.”

—The Birmingham News,
November 17, 2002

discharged into the creek.

That same year, ADEM settled a lawsuit with Sloss Industries (now Walter Coke), one company that was responsible for illegal discharge into the creek. The Supplemental Environmental Project agreement required Sloss Industries to donate 326 acres of land near the creek, develop a comprehensive Greenway Master Plan with local stakeholders, and pay a \$675,000 penalty that would be used to support that plan. Since the settlement was finalized in early 2003, Sloss has proven to be supportive of the greenway project, including the completion of a master plan for an 8-mile section of the greenway. Sloss Industries and its employees have provided financial assistance and manpower to many of the cleanup efforts.

In May 2003, yet another catastrophic storm hit Jefferson County, followed by a 100-year flood that destroyed homes in the city of Fultondale, and ruined Brookside’s entire historic town center—including its city hall, post office, a newly renovated youth center, and more than 50 homes. In the wake of the flood, numerous families were displaced, and many local buildings had to be demolished.

As a result of the ongoing flooding and highly visible destruction, local groups were motivated to take action and contribute to cleaning up the creek. On August 28, 2004, in the town of

Brookside, the Partnership teamed with the Alabama Power Service Organization (APSO) for the first-ever community cleanup of the creek, involving 15 sponsors and 200 volunteers. In that event alone, volunteers pulled 14 tons of debris from the creek, much of which had been deposited by the flood in 2003. The following year, in 2005, another community effort led by the APSO organized Tarrant residents to build a brand new community park on the old mobile home park within a day. Public and private organizations have substantially contributed to the Partnership’s mission. In addition to the APSO, local businesses including Vulcan Materials Company, Thompson Tractor Company, and Sloss Industries have sponsored events and donated materials for Partnership activities.

Brownfields to Greenspace

The contaminated land at abandoned mining and industrial sites along the creek, and associated liability issues, were substantial roadblocks to acquiring and redeveloping land in the watershed. To address this problem, the Freshwater Land Trust, on behalf of the Partnership, applied for and received a \$200,000 EPA brownfields assessment grant in 2004.

The Partnership developed a proposal that used the funds on several different sites along the creek. That multipronged approach to using the grant helped ensure enthusiasm and cooperation from communities all along Five Mile Creek for this step in the process. From October through December of 2004, the Land Trust and the U.S. Geological Survey (USGS) organized public meetings in each community along the creek, starting at the headwaters in Center Point, and continuing along the stream to the last meeting at the mouth of the creek in Graysville. Hundreds of residents participated, identifying their concerns and pinpointing potential sites for assessment, such as abandoned mines,

Table 3. Five Mile Creek Brownfields Assessments

	Acres	Former Uses	Major Contaminants in Soil and Sediment	Planned/Proposed Redevelopment
Vulcan Rivet and Bolt	7.5	Tool and die manufacturing facility	<ul style="list-style-type: none"> • Lead* • Arsenic* • Iron • Zinc • Manganese • Petroleum • Possible solvent contamination 	Site in cleanup and planned uses are warehousing, commercial, retail/mixed-use, incorporation of greenspace.
Tarrant Park	16	Mobile home community	<ul style="list-style-type: none"> • None 	Now a park with walking trails, picnic pavilions, and other amenities and is part of downtown revitalization plan.
Brookside Park	18	Farm operation near Brookside Mine and coke battery operation	<ul style="list-style-type: none"> • Arsenic* 	18-acre park with walking and biking trails, canoe launches, camping, fishing, and other outdoor recreation.
Lewisburg Coke Oven	18	Beehive coke oven/coke production facility	<ul style="list-style-type: none"> • Arsenic* • Copper • Chromium* • Iron • Manganese • Selenium • Polycyclic aromatic hydrocarbons (PAHs)* 	Historical park, being developed as trailhead for Rails to Trails.
Walkers Chapel Acid Mine Drainage	32	Coal mine discharge	<ul style="list-style-type: none"> • Acid mine drainage with arsenic • Copper • Nickel • Zinc • PAHs 	Site cleanup plan being investigated and no redevelopment plans at time of assessment.
Sloss at Coalburg Mine	301	Coal mine	<ul style="list-style-type: none"> • Arsenic* • Copper • Iron* • Manganese* • Zinc • Lead* 	Site in cleanup and planning for large-scale reforestation and stabilization of the most sensitive areas.

* Levels found that exceed ADEM preliminary health-based “screening values”

A “Park Raising” in Tarrant: An Initial Dream Fulfilled

On May 14, 2005, more than 200 volunteers came to the flood-ravaged former site of the Mobile Home Estates. As part of its ongoing effort to support local cleanup efforts the Alabama Power Service Organization sponsored its second annual community-based volunteer effort. Within a day, the team of volunteers in Tarrant cleaned, built, and inaugurated Chief William “Billy” Hewitt Park in honor of their hometown fire chief. The park marked the first of its kind along the Five Mile Creek Greenway. Partnership members and ordinary citizens alike are expecting the trend to continue, as other communities plan additional park building events along Five Mile Creek.



“This whole project could not have happened without the brownfields program. Some of the land couldn’t be acquired for the greenways project because of perceived environmental contamination. Brownfields funding was like manna from heaven.”

—Wendy Jackson,
Freshwater Land Trust

former coke oven sites, and dry cleaners. A committee of experts pulled from the Partnership and USGS met to select the highest priority site for assessment in each of the six communities. Table 3 shows the six sites that were ultimately chosen for assessment, along with the major contaminants of potential concern and proposed redevelopment goals.

Thanks to these grants, brownfield assessment often acts as a steppingstone toward revitalization of an area. With a more complete picture of the problem sites in the area, local leaders can take the best steps in reusing the land. Often, municipalities choose to “redevelop” the land by not developing it at all. Making greenspaces, such as the long greenway planned at Five Mile Creek, are desirable community amenities and have little downside. Parks and open spaces

improve the health and lifestyles of local citizens and do not risk tarnishing the area with abandoned buildings or toxic substances decades later.

Greenways and Blueways for Citizen Wellness

Physical activity is good for your health. It helps control weight, prevents heart disease and certain cancers, slows bone loss in seniors, and reduces anxiety and depression. Yet, a Centers for Disease Control and Prevention (CDC) survey in 2007 reported that a majority of Americans do not get the recommended amount of moderate physical activity (30 minutes a day, 5 days a week). Nearly one-fourth of adults engage in no leisure-time physical activity at all. Physical inactivity in the United States is contributing to obesity and an emerging health crisis nationwide.

A key goal of the Partnership is “citizen wellness” for residents along Five Mile Creek. The Partnership envisions a seamless network of interconnected greenways and blueways along all 45 miles of Five Mile Creek. Sidewalks, bike lanes, paved shoulders, and parkways could help form “complete streets” that are friendly to pedestrians, bicyclists, motorists, and bus riders alike.

The trails, greenways, and blueways that make up the Partnership’s vision promote public health and wellness. They provide people of all ages with safe, accessible, attractive, and low-cost ways to exercise, through such activities as walking, bicycling, hiking, skating, canoeing, or jogging. Several studies have reported that people exercise more when they have access to a trail or greenway.

As the formation of the Five Mile Creek Greenway progresses, Francesca Gross, Five Mile Greenway Partnership Coordinator, said that the Partnership hopes to make childhood obesity a priority in its citizen wellness programs. With input from the Jefferson County Health Department and the Cawaco RC&D

Council, the University of Alabama at Birmingham (UAB) School of Public Health received a grant from the Robert Wood Johnson Foundation to study childhood obesity. The UAB group is using the Five Mile Creek Greenway as its study area for data on minority juvenile health. Gross emphasized the need to help connect people to the parks. Ultimately, the Partnership hopes to construct places where families have “a safe place to get out, exercise, and have fun.”

A Safe Route to School

In the Fall of 2007, the Bikes Belong Coalition, an organization sponsored by the U.S. bicycle industry, awarded \$5,000 to the Cawaco RC&D Council to help construct the first stretch of the Tarrant Aqueduct Trail. This multiuse path connects two schools and links to 16.5 miles of proposed rail trail as well as parks, greenspaces, and residential areas. This funding leveraged two Alabama Department of Transportation “Transportation Enhancement Grants.”

This project is important not only as a key connection in the Five Mile Creek Greenway system, but also as a project in its own right, serving as a “safe route” for children at the Tarrant Elementary and Middle Schools to walk to school. Developing safe ways for children to get to schools is an important attribute of the revitalization that was promoted by the Greenway Master Plan.

And the Winner Is...

In November 2007, the Freshwater Land Trust and the Five Mile Creek Greenway Partnership won the prestigious Phoenix Award for EPA’s Region 4. The award was for excellence in brownfields redevelopment. In making the award, the judges noted:

“The recovering stream and the growing greenway network are attracting new visitors to the area to canoe, camp, hike, and cycle. Increasingly, residents are

Creek Deemed Safe for Recreational Activity

In January 2008, the USGS published a comprehensive assessment of water quality conditions in Five Mile Creek. After a 3-year study from 2003 to 2005, the report deemed the creek safe for most recreational activities and as a habitat for aquatic organisms. The report is available online at: <http://pubs.usgs.gov/sir/2007/5272/>.

The Brookside Greenway Festival

By 2007, the revitalization along Five Mile Creek in Brookside had helped create a rallying point for community events in the town. On a crisp, clear day on March 17, Brookside held its first annual Greenway Festival, complete with live music and a Miss Greenway pageant. The event was an important milestone in the revitalization seen in the area. While planners for the festival had hoped for 500 people to show up, nearly five times as many actually came, resulting not only in a fabulous festival, but the town’s first traffic jam in recent memory! Dozens partook in the 5K run and the 10K and 30K mountain bike races. Visitors could go for canoe rides down Five Mile Creek or grab a bite to eat from the wild game stand. More than 70 young contestants competed in the Miss Greenway beauty pageant in six different age categories. Over the course of the day, the festival raised over \$10,000 for the construction of the greenway.

The success of the first Greenway Festival has prompted repeat events each spring, since 2007. The fourth annual Brookside Greenway Festival was held on May 1, 2010.



Five Mile Creek Greenway Partnership, 2009

taking advantage of the new recreational amenities as well, which is stimulating other new activity in the region. Brookside is building a new city hall. In addition, a new business in town is providing services to visiting canoeing enthusiasts. Tarrant is an active

Table 4. Sample of Funding Sources Used to Spur Local Revitalization

Federal Grants	State and Local Grants	Private/Industry Support
<ul style="list-style-type: none"> • 2001 FEMA grant for Tarrant (\$1.4M) • EPA Brownfields Assessment Grant (\$200K) • EPA Brownfields Cleanup Grant for Tarrant • USGS matching of Land Trust funds • Federal Highway Administration • National Endowment for the Arts (\$10K) 	<ul style="list-style-type: none"> • Alabama Dept. of Transportation (Transportation Enhancement) (\$496K) • Community Foundation of Greater Birmingham (\$35K) • Regional Planning Commission funded 12 corridor studies • ADEM—Funding and support for site assessment and cleanup. • Alabama Department of Economic and Community Affairs—Recreational Trails (\$160K) 	<ul style="list-style-type: none"> • \$1.2M pledged by Southern Company over 5 years • Bikes Belong (\$5K) • D.R. Horton—Supplemental Environmental Project (\$22K) • 5 Star Grant from Fish and Wildlife Foundation and Southern Company (\$37K) • Cawaco RC&D Council Challenge Grants (\$40K) • Hugh Kaul Foundation (\$135K)

Timeline of Five Mile Creek Redevelopment

- **March 2000.** Flood in Tarrant destroys Mobile Home Estates
- **April 2002.** First informal stakeholder meeting
- **June 2002.** Five Mile Creek Greenway Partnership formed
- **February 2003.** ADEM upgrades usage designation of Five Mile Creek to Fish and Wildlife
- **June 2004.** Freshwater Land Trust (then the Black Warrior-Cahaba Rivers Land Trust) receives EPA Brownfields assessment grant
- **August 2004.** First-ever APSO Partnership community cleanup of Five Mile Creek
- **October–December 2004.** Community meetings to identify potential brownfields sites for assessment
- **2005.** Freshwater Land Trust acquires 588 acres as part of Jefferson County Greenways program
- **February 2005.** Sloss Industries contracts with Regional Planning Commission of Greater Birmingham to produce an 8-mile Greenway Master Plan
- **May 2005.** Volunteers build Billy Hewitt Park in Tarrant
- **April 2007.** First Brookside Greenway Festival held
- **July 2007.** Freshwater Land Trust receives its second EPA Brownfields assessment grant
- **April 2008.** Trail location study issued

Park...Fultondale and Graysville have new park and housing developments underway. Greenway events are generating new tax revenue, and property values have stabilized. Perhaps even more importantly, residents are now looking to stay. It will be years before the full economic impact of the greenway is realized, but all partners in the Five Mile Creek project agree that the greenway has brought new development, a new image, and new economic life to the area.”

The honor marked the first time in the Phoenix Award’s 10-year history that a project in Alabama was recognized—a tremendous accomplishment for greenway advocates. As part of the application, the Freshwater Land Trust and Alabama Power Company created a 15-minute video chronicling the challenges faced and solutions employed at Five Mile Creek. The video, “Five Mile Creek: Decline and Renewal” can be viewed at www.youtube.com. As an award recipient, representatives from the Partnership presented the work done at Five Mile Creek at the 2008 National Brownfields Conference.

Funding Resources Tapped

Although the Five Mile Creek Greenway Partnership has had no dedicated funding source, since the intergovernmental

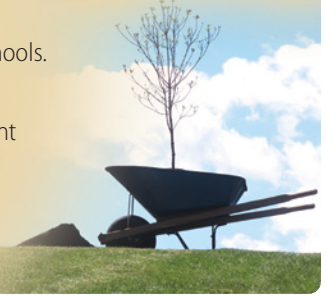
agreement was signed, the greenway effort has secured more than \$4.2 million in county, state, and federal resources. Since 2006, Francesca Gross through the Cavaco RC&D Council has supported Greenway Partnership projects with public and private grants. Individual partners with various degrees of internal support have also applied for numerous grants to support the section of the greenway in their respective cities. Her work has been instrumental in coordinating the financial support needed to carry out the ambitious cleanup and construction plans. In addition to grants, the Partnership has been helped by in-kind contributions and the many labor hours put in by local volunteers. Additional grants to other entities, such as the Freshwater Land Trust and the cities themselves, have also helped indirectly support the Partnership's mission. Table 4 displays some of the various funding sources that have spurred local revitalization.

Lessons Learned

- **Cooperate and relate:** The residents and leaders of the communities along the creek looked beyond traditional barriers and divisions, and worked in concert to achieve a common vision. Besides nonprofit and government organizations, local corporations can play a huge role in community outreach. For example, through its employee association, Alabama Power recruited community volunteers for work days to clean up the creek and build the greenway.
- **Team up with health departments:** Although founding members of the Partnership had community health in mind from the start, they have not teamed up directly with the state or local health department. Private grants through the University of Alabama at Birmingham will begin the data collection necessary to document community health issues up front and perhaps help to measure changes in

Health Impacts of the Five Mile Creek Redevelopment

- Provided opportunities for recreation and physical activity on trails, greenways, and blueways.
- Created safe walking routes to schools.
- Began ecosystem restoration to reduce water pollution and prevent flooding.
- Brought new economic activity to the area.



the health of residents as they use the greenway. Health departments can be good partners for this type of data collection.

- **Utilize brownfields programs:** Brownfields funding was crucial to the Five Mile Creek story—not for one big site, but for multiple sites along the waterway—paving the way for acquisition of the future “pearls” for the greenway necklace.
- **Work with the community:** Community members are an invaluable resource for information about brownfields sites. For example, at community meetings called by the Partnership, former coal miners helped map the location of small abandoned mine sites. To get community members involved, reach out to them by posting bulletins in public areas (e.g., the library or local grocery store) and arranging newspaper articles. Remember, not everyone has computer access, so provide information through whatever means are most accessible to the community (e.g., a pamphlet, a poster).
- **Involve a professional coordinator:** If funding is available, bring on a coordinator early. It was very difficult for people with other full-time jobs to work on such a time-intensive project. The current coordinator has been key in managing the Partnership's growing activities.

Resources for More Information

Five Mile Creek Canoe & Company

A company formed in 2007 that provides recreational opportunities for residents and tourists along the greenway. The continued success of the company speaks to the remarkable transformation of the old “Creosote Creek.” The company serves as a model for businesses that utilize natural resources not only to create a successful venture, but also to better the health and well-being of the local community.

<http://canoe5mile.com>

Five Mile Creek Greenway Partnership

A partnership that promotes and facilitates coordinated and cohesive planning, development, and maintenance of a network of greenways, parks, trails and points of interest along the Five Mile Creek Corridor.

www.fivemilecreekpartnership.org

Five Mile Creek Greenway Partnership—Trail Location Study

A comprehensive study issued by the Partnership in the spring of 2008. The study details existing, proposed, and planned projects that can form this network.

www.rpcgb.org

Freshwater Land Trust (formerly the Black Warrior–Cahaba Rivers Land Trust)

The Freshwater Land Trust’s mission is the acquisition and stewardship of lands that enhance water quality and preserve open space. The Freshwater Land Trust, based in Birmingham, Alabama, acquires, conserves, and connects open spaces that are critical for the protection of rivers and streams and that provide recreational opportunities for the communities in north-central Alabama.

www.freshwaterlandtrust.org



Highland Park, Milwaukee, Wisconsin

Reinventing Public Housing for a Healthier Future

The redevelopment of a run-down public housing complex in Milwaukee, Wisconsin provides a vision of improved community health through sustainable urban development. By planning carefully and listening to community feedback, the City of Milwaukee was able to integrate the once isolated Highland Park public housing community into the surrounding neighborhoods. Along the journey, streets were made more walkable, community bonds were strengthened, and green-roof structures were built to sustain local wildlife and decrease emissions. As a result, residents are now proud of the neighborhood they live in. This case study might be especially useful to city planners and private developers.

Background

The word “brownfields” frequently conjures up images of wastelands, polluted waterways, or darkened and contaminated industry buildings. Yet sometimes brownfields are actually plots of land or buildings that are far from forgotten or contaminated, and are simply in need of revitalization. Such was the case in the Highland Park public housing complex in Milwaukee, Wisconsin. Since their construction in 1967, two large, 12-story apartment buildings towered over the urban landscape. The cement, barrel-shaped complexes were stand-alone structures with little connection to the local community. At the foot of the towers, 56 units of concentrated row houses for large families (four to five bedrooms) made up the remaining portion of the complex.

Although the design of the buildings along the street shut off residents from the rest of the neighborhood, many low-income Milwaukeeans depended on the

“superblock” buildings for affordable housing. Perhaps as a result of long-term isolation and concentrated poverty, Highland Park was plagued by urban crime by the late 1990s. Drug dealing, prostitution, and other drug-related crime were widespread in the towers, compromising residents’ physical security and quality of life.

After the completion of several successful HOPE VI revitalization projects in Milwaukee (see box), the city turned its attention to the possibilities at Highland Park. The difficulties facing the residents had reached a tipping point, and in 2002, the city received its first federal grant to begin revitalization of the neighborhood. Since then, the towers and surrounding housing have been demolished and replaced with two new public housing constructions: Highland Homes, consisting of 46 standalone single-family homes, and the 4-story, 114-unit Highland Gardens complex. As a result, the local landscape has been transformed.

What Is HOPE VI Funding?

HUD's HOPE VI Program was borne out of an early 1990s finding that more than 86,000 public housing units were in disrepair. Since 1992, HOPE VI has provided more than \$6.2 billion in grants to local governments for public housing construction and revitalization. The HOPE VI Revitalization grants fund an array of expenditures including demolition of distressed housing, building of new improvements, and development of community programs to serve both new residents and those displaced. In Milwaukee, five HOPE VI grants have helped transform public housing in the city.

For the Highland revitalization, HACM secured \$19 million in HOPE VI funding, which amounted to about half of the total cost. The remaining part of the tab was picked up by the Wisconsin Housing and Economic Development Authority and U.S. Bancorp Community Development Corporation, a private donor.

The changes exemplify how community health can become the central element in the establishment of new, modern public housing.

Public Housing Gone Awry: An Unhealthy Environment

In 1967, the city constructed the Highland Park public housing complex as a means of providing residences for low-income families. Like many other projects of the "urban renewal" movement, the Highland Park design stuck out from the neighborhood. The towers were not only a hotbed for crime, but in many respects failed to provide basic comforts for residents. Warren Jones, Managing Director of Development for the Housing Authority of the City of Milwaukee (HACM), called the residences "warehousing." The rooms were pie-slice-shaped and oddly arranged. Neither tower had air conditioning, meaning that warm summer days could result in sweltering conditions within the towers. Bathrooms, with entrances only 28-inches wide, were not handicap accessible. The structure of kitchens prevented them from being adapted to meet the needs of disabled tenants. These living conditions exacerbated the physical difficulties of aging residents,

some of whom required walkers or wheelchairs.

The surrounding row houses for families similarly lacked much of the comfort and functionality that residents needed. These units were home to some of largest families under HACM, some containing as many as 11 children. Yet the houses all had less than 1,100 square feet of living space, with four to five bedrooms each and no more than one bathroom.

Jones, who oversaw the development of the Highland Park revitalization, said that, because of these shortcomings, residents greeted the removal of the 56 subsidized housing units as an "unexpected gift."

Planning and Paving the Way to a Healthier Future

The HACM took a bold step by making community health a primary focus of the new Highland Park facility. After designating the towers as residences for the elderly and disabled, HACM prioritized health needs in the revitalization plans. HACM worked in tandem with Independence First, a nonprofit disability advocacy group working in greater Milwaukee, to create plans for residential units that facilitate independent living for citizens with disabilities. According to Jones, Independent First proved valuable in developing universal design principles that guided the construction of flexible and accommodating housing. In the end, the entire project plan not only met, but exceeded the regulations set forth by the Americans with Disabilities Act, and provided safer, healthier living conditions for all.

As the city prepared to break ground on the projects in 2004, HACM worked with the current residents at Highland Park to ensure that the community's needs were addressed in the redevelopment plans. Residents of Milwaukee public housing sections met monthly

with HACM staff. These open forums allowed residents to voice their concerns for their living situation. In part because of this close relationship with the community it serves, HACM had a finger on the pulse of the Highland Park community. As HACM explored the potential of a HUD-funded HOPE VI grant and, later, as plans crystallized, staff kept residents of both Highland Park and adjacent neighborhoods informed of the continual progress. These outreach techniques, combined with the neighborhoods' general distaste for the large cement towers at Highland Park, meant that the city's plans were as well received by the surrounding neighborhood as by the Highland Park residents themselves.

HACM Youth & Family Services Manager Maria Rodriguez said that at first residents thought the plan to recreate the Highland Park residences was just a pipe dream. Previous revitalization of public housing in Milwaukee had involved updating and remodeling. No efforts had truly reached the magnitude of the plans for Highland Park. “[There was] disbelief that this was really going to happen,” Rodriguez said. “You’re going to build what? For us? Oh yeah, right.” But as the plans progressed and formal agreements between the city and developers were reached, residents began to realize that the project was more than just hype: Highland Park was actually going to be rebuilt and transformed into a healthier living environment.

Using the Built-Environment to Improve Health and Quality of Life

Part of the vision for the Highland Gardens facility was to integrate the Highland Park community into the greater surrounding neighborhood, and not just build an updated version of an otherwise isolated public housing complex. The isolation of the old Highland Park complex was due, in part, to the orientation of the built-environment. For instance, the complex had no through-streets,

What exactly is a “green roof”?

Although some definitions call rooftops with solar panels “green roofs,” the term traditionally refers to a roof whose exterior includes a layer of vegetation and soil. Typical shingled or cement roofs let precipitation drain off immediately. A green roof, on the other hand, helps control runoff by absorbing rainwater in its plants and soil. The thickness of a green roof also insulate a building, thereby reducing climate control costs throughout the year. Although the roof at Highland Gardens has restricted access, green roofs elsewhere are open to the public. Such access enables some large green roofs to support gardening and agriculture. The plants grown on these roofs cannot only help feed local residents, but also provide safe habitats for native wildlife.

making it essentially impermeable from the outside. Instead, two dead-end roads served as the only access points into and out of the area. The revitalization plans proposed developing streets that passed through the complex, which would increase the streets' walkability and help connect the new housing with the adjacent neighborhoods (see Figure 4 for illustration).

The planners identified another isolating factor: the orientation of the former Highland Park neighborhood. As an improvement, planners decided that the front doors of the new Highland Homes would face outwards, or toward other pre-existing houses surrounding the housing complex. This orientation could potentially strengthen community ties and increase accessibility to the neighborhood. Such an architectural choice embodies the goal to which HACM aspired: to integrate the Highland Park community with the broader surrounding neighborhood.

As a result of these urban planning decisions, residents now feel more integrated into the broader community. In addition, important outside services, such as emergency medical care and law enforcement, can now access the



Photo: www.korom.com

Source: HACM, 2009



Figure 4. Map of the redevelopment. The central complex is Highland Gardens; the three surrounding city blocks of houses are the 46 Highland Homes.

“When people have visited Highland Gardens from outside, [they say] ‘I didn’t even know this was public housing.’”

—Warren Jones, Managing Director of Development for HACM

neighborhood with greater ease. For a once crime-ridden area, increased police surveillance is a welcome change.

Developing Highland Gardens

The Highland Gardens public housing structure is a testament to innovative design and sustainable building approaches. The mid-rise complex was built as an “independent living” facility and specifically tailored to the needs of the elderly and disabled. The 120,000 square foot facility mostly consists of dwellings for individual residents, although there are a handful of family units. The entire structure is handicap accessible.

The impressiveness of the Highland Gardens construction lies primarily in its breakthrough design, which meets the infrastructural needs of the community while simultaneously incorporating sustainable and environmentally friendly building practices. Reclaimed hardwood from the demolished Highland Park Boys & Girls Club gymnasium floor found new life as parquet slab flooring in the Highland Gardens common rooms. For those in the know, these floors made for an attractive reminder of

how far the neighborhood has come.

Energy-efficient choices for lighting and climate control were used throughout the complex. But the crowning achievement of Highland Gardens is a 20,000-square-foot green roof. Green roof technology not only helps to reduce heating and cooling loads of buildings, but has other potential environmental benefits, such as sustaining local wildlife, particularly birds and insects. At the time of construction, the Highland Gardens green roof was the largest on any residential complex in the United States. The use of rainwater collection barrels and other runoff control methods have helped to make the building a model of functional “green” design.

Although HACM’s focus on community development factored into the broader design plans at Highland Park, the development of community spirit played a role in interior design as well. Planners elected to make useful amenities available inside the Highland Gardens complex itself. A barbershop, movie theater, and computer center are all located within the walls of Highland Gardens. Such facilities help ease the toll Milwaukee winters take on older

residents. In addition to providing residents with easy accessibility to necessities, these in-house facilities build community spirit and enable senior and disabled residents to have greater involvement in neighborhood events that are held at the complex.

Developing Highland Homes

Unlike Highland Gardens, Highland Homes set out to be a mixed-income neighborhood, incorporating both public housing and houses for sale on the open market. So, when developing Highland Homes, HACM had to balance the practical needs of the public housing residents, the integration of the houses with the surroundings, and the marketability of the houses to be sold. Of the 46 standalone, single-family homes, 16 were designated as public housing, and the remaining 30 were to be priced at market value. HACM developed 15 different modular home styles that would fit into Highland Homes. To ensure that the development visually meshed with the existing neighborhood, the design aesthetic followed traditional Milwaukeean architecture, including pitched roofs, porches, and clapboard exteriors.

Although Highland Homes residences were primarily intended for families, the HACM designers went to great lengths to accommodate residents who were, or who might someday become, disabled. Some of the many features include:

- Wheelchair-accessible ramps from the front porch.
- Step-less pathways leading from detached garages to the homes.
- Three-foot doorways wide enough for wheeled traffic.
- Bedrooms and full bathrooms on the ground floor.
- Kitchen sinks that can be adapted for roll-up wheelchair access.
- Pre-framed elevator shafts in all houses for potential future construction.

Reusing the Old to Build the New

As part of the city's focus on sustainable development, HACM created programs specifically to address the waste from the original Highland Park demolition. An impressive 85 to 90 percent of the former tower material was reused by the city for various projects. Much of the cement from the concrete towers served as road base for a major nearby highway construction project—the Marquette Interchange.

HACM partnered with a local volunteering group, the Milwaukee Community Service Corps, to get the nearby youth community involved in the revitalization. Local teens helped HACM recover usable equipment from the towers, such as locks, windows, and automatic door closers. Not only was the equipment useful for the new construction, but this process also gave some young Milwaukeeans basic handyman skills. Those same teens can also feel proud of their efforts to revitalize their community.



Keeping with the sustainable elements that are a hallmark of the Highland revitalization, designs for the homes included a variety of innovative features. Among these are energy-efficient lighting, advanced ventilation and climate control systems, special landscaping to control rainwater, and even soy-based materials.

Accounting for Everyone

Looking out for community health involves not only creating accessible design plans for a new development, but ensuring appropriate logistics for displaced families, such as suitable temporary lodging. Despite the substantial improvement the Highland Park redevelopment represented for the neighborhood, previous residents were still displaced from their original homes in the complex. To account for this, HACM guaranteed housing for the displaced residents—providing numerous interim or alternative public housing arrangements. Since the new Highland Homes were being built as the old row houses were being destroyed, some

Public Development for Public Housing

Unlike most other public housing authorities around the nation, HACM is one of the few to design and carry out its development plans without contracting out to private development firms.

“Communication is so important: from the very top of our administration, to the people who are being impacted, to the people who are surrounding the people being impacted—it is so important.”

—Maria Rodriguez, Youth & Family Services Manager, HACM

families took the option of staying in their current residence until their new home was built. Others chose to move into other HACM homes being built elsewhere in Milwaukee. In anticipation of the net loss of public housing as a result of the Highland Park revitalization, HACM arranged to build 40 other single-family homes between 1,800 and 2,200 square feet in size. This plan piggybacked on current private construction in Milwaukee. The new houses built by HACM were incorporated as part of housing developments already being built for the real estate market.

When leaving Highland Park, each resident family was able to choose a residence comparable to, or frequently better than, their current housing. If none of the alternative housing options appealed to a family, they had the option to live in Section 8 private housing. In this case, HACM facilitated this transition by arranging the Section 8 vouchers through HUD. This program guarantees that any fair-market rent that exceeds 30 percent of the family’s income can be subsidized by the government. Above all, HACM tailored options to meet the needs and desires of each family on an individual basis. A family’s choices were just that: an active choice about where to move.

Despite leaving Highland Park, residents who moved elsewhere still received support from HACM. The Housing Authority provided comprehensive support to help the families adapt: familiarizing the family with the school system, arranging for school transportation when necessary, introducing them to the local neighborhood association, and making them aware of nearby learning centers.

Providing Resources to Ensure a Smooth Transition

The shift from cramped concrete superblocks with linoleum floors to spacious, wood-framed modular homes with clean

carpeting meant residents were moving not only into new homes, but into new lifestyles. HACM understood that the transition could have been difficult for residents, so it developed a program to inform residents about proper maintenance of the property. The families were provided with information about how best to use the energy-efficient features of the home (e.g., heating and cooling), how to properly maintain the carpets, and even how to hang picture frames on the wall. This not only ensured that residents were making the most of their new space, but that the property and new construction would remain in good shape—and able to sustain future generations of residents.

For the former residents of the towers at Highland Park, many of whom were elderly or disabled, living in their new home was not as problematic as the physical process of moving. Case managers from HACM held weekly meetings to coordinate the logistics of moving from the towers into Highland Gardens. Staff identified and provided assistance during elevator outages. They supplied plastic bags and labels, checklists, and reminders. The city’s assistance proved crucial for some elderly residents who had lived in the towers for decades. The residents had little experience in the moving process, which put them at risk for even the simplest of logistical mistakes, such as accidentally packing daily medicine or other health necessities.

A Legacy at Highland

To the community, the impacts of the Highland Park redevelopment are clear. The new development has revitalized the neighborhood, integrated formerly separated communities, and instilled a new sense of pride in the neighborhood. Residents are now living in sustainably developed buildings that are cleaner and more accessible than the former housing complex. Some community leaders and members even speculate that crime in the area has decreased, although

supporting data are still being collected.

The greatest dividends from the project could be seen in years to come. In fact, a nonprofit group called the Planning Council is monitoring the development area and evaluating indicators such as employment rates, resident satisfaction, and property values for inclusion in a report that shows the impacts of HOPE VI grants on the urban neighborhood. With continued guidance and support from HACM, the city hopes that the residents will benefit from the better integrated community.

From coordinated monthly neighborhood meetings to statistical monitoring of the neighborhood's prosperity, the city looks after the residents it supports. That dedication to Milwaukee's neediest has even had impacts on the wider community. The revitalization of Highland Park and its economic success has inspired several nearby apartment residences to follow suit by remodeling and revitalizing their own properties. Without a doubt, the effects of the three-city-block Highland Park project have helped an even broader community, and will continue to serve as a vision for revitalization projects in the future.

Lessons Learned

• **Actively consider community**

health needs: Whether it is removing blighted property, building homes that are accessible and affordable, or creating more greenspaces through careful design, there are countless ways that redevelopment can contribute to improved health and well being of residents. By creating thoughtful plans that aim to not only rebuild, but revitalize a neighborhood to create a healthier, more sustainable environment, the development community can be seen in a favorable light—which could facilitate and accelerate the planning and development process.

Health Impacts of the Highland Park Redevelopment

- Provided safe, affordable, “green” housing.
- Helped meet the needs of elderly and disabled residents.
- Improved neighborhood walkability and access to services.



• **Residents know best what they**

need: As the public housing authority, HACM had the advantage of communicating with the neighborhood before revitalization planning began. Insights provided by constant interaction with the community helped the city staff understand the prevailing community needs, which were later incorporated into the future development designs. Meeting those prevailing needs leads to more satisfied community members. The sense of pride that the residents develop could result in greater appreciation of the revitalization efforts, which could in turn result in developments that are lasting and more sustainable over the long term.

- **Keep plans flexible:** A key component to the success of the Highland Park project is its ability to meet the needs of its current residents, as well as the residents' possible future needs. Highland Homes represents a pinnacle in adaptable design. Large single-family homes are a step up for young families who lived in the superblock row houses, but they also meet the needs of a community that will age over time. Warren Jones cautioned that each person is only “temporarily able.” Building adaptable residences helps the plans of today meet the needs of tomorrow.

Resources for More Information

Green Roofs for Healthy Cities

A nonprofit network of public and private organizations serving North America. Their website contains educational information on green roofs as well as links to the various green roof methodologies and equipment suppliers.

www.greenroofs.org

Housing Authority of the City of Milwaukee (HACM)

The division of city government responsible for the construction, management, and provision of public housing in Milwaukee. HACM also directly carried out the construction of Highland Gardens and Highland Homes. Its site contains a brochure on the homes available, as well as general information about the work HACM conducts.

www.hacm.org

U.S. Department of Housing and Urban Development (HUD)

A department of the U.S. government that offers low-cost loans to allow low-income participants or nonprofits to buy and renovate housing structures. HUD administers HOPE VI grants, among other funds. Its website contains several important resources and references that might be useful to individuals and groups looking to redevelop and revitalize housing structures.

www.hud.gov



Keweenaw Bay Indian Community (KBIC), L’Anse Indian Reservation, Michigan

Hundred-Year-Old Contaminated No-Man’s Land is Reborn as a Healthy Hub for Outdoor Recreation

In Michigan’s rural Upper Peninsula, an Indian community reclaims their pristine lakeshore in the name of environmental, cultural, and health-conscious responsibility. This case study demonstrates what happens when a tribal community takes the initiative and bold steps needed to restore a healthy outdoor recreation area. Working closely with tribal members and with federal partners, the remediation effort not only reduced harmful contamination, but also revived a community landmark. This case study can serve as a model for other communities that want to preserve or restore natural areas.

Background

Located on the L’Anse Reservation, along the south shore of Lake Superior in Michigan’s Upper Peninsula, KBIC is an organization of the Lake Superior Bands of Chippewa Indians. KBIC is a federally recognized Indian Tribe with approximately 3,200 current members. Keweenaw Bay itself is an inlet off of Lake Superior, and is situated a few short miles north of Baraga, Michigan.

In the past, the northern area of the Upper Peninsula was home to an active copper mining industry. In fact, the Upper Peninsula was even home to some of Earth’s only evidence for prehistoric copper mining. For KBIC, however, one modern facility left a particularly harmful legacy of contamination. A copper ore stamp mill called the Mass Mill processed copper ore from nearby mines between 1902 and 1919. Stamp sand is a byproduct of the industrial ore-collection process. Once a host rock is crushed and stripped of



Source: Record of Decision.doc (Katie Kruse)

its precious metals, the leftover rock is a coarse sand, which amounts to a lot of waste material. Over 18 years of operation, Mass Mill dumped approximately 3 million tons worth of stamp sands into Keweenaw Bay. Even though stamp sands appear to be ground



Source: Record of Decision.doc (Katie Kruse)

More Than Just the Land

For KBIC, healthy and safe recreation acted as the primary motivation to revitalize the land at Sand Point. However, the cultural significance of the area also served as an important impetus. For one, the area has long had spiritual significance. Archaeological work performed in the 1970s also revealed evidence of Native American activities just outside the boundaries of Sand Point. KBIC officials and the community at large both felt an acute responsibility to protect these lands

In addition, Sand Point is home to contemporary activities that express a continuation of Chippewa culture. The area has long served as a gathering place for regular tribal powwows. Nearby ponds within Sand Point also play host to an annual fishing derby for children. Since the redevelopment, participation has boomed. In 2009, 288 children registered for the derby.



up stone, these stamp sands are laced with naturally occurring heavy metals and residual stamp mill compounds. For humans, lead and arsenic present the greatest threat.

One hundred years later, nature has taken its course in Keweenaw Bay. The dumped stamp sands that used to be submerged have been pushed ashore by lake currents. The recreation area called Sand Point has become ground zero for these deposits. KBIC estimated that stamp sands contributed to 550,000 yards of contamination over 71 acres at Sand Point—45 acres of which were on the L'Anse Reservation. In addition to water quality contamination, the stamp sands were fast becoming a threat to local wildlife, land vegetation, aquatic fauna, and even area residents themselves. In light of the mounting risks and community concerns, KBIC built an initiative to transform the barren contaminated land into a recreational haven.

Starting Out

When a nearby Superfund site named Torch Lake began remediation of stamp sands, members of KBIC grew aware of the dangers lurking on their own community's land. Prompted by the economic, cultural, and health risks associated with the exposed stamp sands, KBIC members became motivated to tackle the issue head on. Taking a cue from their neighbors, KBIC turned to EPA for funding. In 2001, KBIC applied for and won one of what would be several EPA Brownfields Grants. The initial Brownfields Assessment Demonstration Pilot grant spurred a 2-year effort to assess the level of contamination in the Sand Point area specifically. KBIC partnered with the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service, along with local science and engineering firms to conduct field measurements. Analyses of the stamp sands composition showed that the material had elevated levels

of copper, lead, and cadmium. The coarseness of the large sand grains and the dark color meant the land at Sand Point could not retain a large amount of water. These factors translated into acres and acres of barren open land, too dry and toxic to support the growth of vegetation. Laboratory tests on plants that managed to survive showed copper concentrations considered toxic to most vegetation. The photo on the opposite page shows how wide the stamp sands area was along the shoreline. So it comes as little surprise that, despite being a prime lakefront location, Sand Point remained as devoid of recreational activity as it was of vegetation.

Focusing the Approach

The field assessment helped paint a picture of the severity and extent of the environmental contamination. Continuing with the Demonstration Pilot, KBIC staff took the next step by developing a master plan for Sand Point's future. The plan described methods to rehabilitate the land, as well as long-term goals and strategies to make Sand Point a thriving multi-use park.

Developing a multi-use park, however, required more than effective management of the stamp sands. For its master plan, KBIC incorporated the construction or revitalization of numerous outdoor recreation facilities. KBIC values Sand Point as a local asset that, with some encouragement, could coax back members of the community to stop by and partake in a healthy outdoor lifestyle. The master plan included features such as:

- **Shoreline walking trail:** The Baraga area had few walking trails, especially away from traffic. A cleared or gravel path, with benches and informational signs would provide a new attraction to promote fitness.
- **Beach and picnic area:** A redeveloped area close to the water would reconnect visitors to Lake Superior.

- **Shoreline camping area:** Creating a camping area would allow visitors to enjoy the benefits of the outdoor facilities and make Sand Point an attraction for more than just an afternoon outing.
- **Formalized activity area:** KBIC saw the opportunity for an organizing area for the tribal community. A more secluded portion of Sand Point was set aside for cultural activities. Thus, the revitalization represented an asset for public health, as well as a future nexus for community-building and cultural identity.
- **Lighthouse restoration:** Given the popularity of lighthouses for visitors, KBIC suggested that a restoration project be considered to attract traffic.

Input From Community Members Shapes Sand Point's Future

Before finalizing the Master Plan, KBIC organized a series of community forums to determine how local community members thought the land should be redeveloped. Three meetings with the Tribal Council, the top executive body of KBIC, and two meetings for community members at large allowed for substantial community input on the fate of Sand Point. KBIC held meetings both before the first draft plan and afterwards to gauge public support for the master plan. Experts from KBIC, EPA, the USDA Natural Resource Conservation Services, and the engineering firm for the project took comments and answered questions from people attending the meetings.

The public forums revealed broad public approval for the redevelopment. Community feedback showed widespread support for mitigation and redevelopment that would allow greater public use and moderate recreational activities.

What Is a Tribal Response Program?

In 2002, Congress passed several amendments to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that allowed EPA to fund Tribal Response Programs. These response programs permit interested tribes to make steps toward brownfield cleanups on their land. Grants provided by EPA enable these response programs to conduct initial assessments, interface with the community, and develop a comprehensive cleanup plan. Funds can help support oversight and enforcement authorities to ensure that response actions will adequately protect human health.



Monarchs Have Free Rein at Sand Point

In the summer of 2008, a group of teens from Marquette, Michigan, and KBIC gave up time to help the Zaagkii Wings and Seeds Project, a native plant and fauna effort aimed at preserving the Upper Peninsula's environmental heritage. With the imminent "colony collapse disorder" plaguing honey bees, pollination challenges seem to loom on the horizon for farmers; as such, environmental organizations are making a concerted effort to preserve the habitats of all critical pollinators, including butterflies. At Sand Point, local teens coordinated with the Zaagkii Project to build butterfly houses and plant thousands of seeds of native species to serve as habitat for Monarch butterflies. The famous migratory insects travel thousands of miles from across North America to breed in a specific region in Mexico. This effort to support their local habitat at Sand Point not only boosts the local ecology, but gets teens involved in a constructive and educational project. The revitalization of Sand Point proves brownfield remediation renews both environmental well-being and community spirit.



“Redevelopment has enhanced the experience [for visitors]. There is now more area for them to enjoy.”

—Katie Kruse, Environmental Response Program Specialist for the KBIC

Funding the Effort and Breaking Ground

Although the master plan represented major progress in assessing the stamp sands problem, the KBIC needed to take concrete steps to mitigate the contaminants.

After applying for and receiving an EPA grant to fund a Tribal Response Program in 2004, the KBIC developed an analysis of the stamp sands grounds. The “Record of Decision” comparison discussed four potential courses of action:

- **No action.**
- **Soil cover:** This remedy involves regrading the site to allow for proper drainage, and capping the stamp sands above the high water mark with 6–10 inches of clean sand loam soil capable of supporting vegetation growth. Following construction of the soil cap, the cap would be vegetated with native vegetation appropriate for the area.

- **Soil cover with shore armoring:** Shore armoring, in addition to a soil cap, would involve placement of both steel sheet-pile and a stone revetment (building a large stone bank or wall) along the beach front at the site. The purpose of these actions is to keep beach-front stamp sands from moving due to wave action and currents.
- **Excavation and disposal:** This alternative would involve excavation and loading of stamp sand from the site into trucks and hauling material to an off site disposal facility. The offsite disposal facility would either be an existing landfill that agreed to accept stamp sands for disposal, or a landfill constructed specifically for disposal and containment of the stamp sands.

Table 5 shows KBIC’s analysis of the four alternatives. The analysis found that the soil cover strategy was feasible, had a manageable administrative burden, was likely to be affordable, would result in substantial environmental benefit, and would allow for continued development of the area according to the master plan.

After estimates revealed a total cost of approximately \$485,000 just for remediation of the stamp sands, a rural community like KBIC could not afford to finance it alone. The EPA Brownfield Remediation Grants had the potential to provide a substantial amount of funds needed, but the total of \$312,000 from EPA would not maximize the area of remediation. The KBIC sought out and received other grant opportunities, including \$100,000 of support from the Great Lakes Commission Soil Erosion and Sedimentation Program. Although KBIC fell short of the funds needed to fund the full area of cleanup, 34 acres of contaminated sand could be capped. By the fall of 2006, the KBIC had covered a large expanse of once-exposed stamp sands in the area. A new revegetation effort initiated in 2009 will help restore the natural environment the community desired. Additional work is planned for 2010, including covering and native

Table 5. Sand Point Cleanup Alternatives Analysis

Cleanup alternative	Effectiveness	Implementability	Cost	Administrative burden	Impacts during implementation	Ongoing operating and maintenance costs	Main negative alternative aspects
No Action	Would not reduce ongoing environmental impact	No actions necessary	None	None	Continuation or current impacts	None	No change in current conditions
Soil Cover	Effective with reduction of stamp sand erosion into Lake, increase in biodiversity, increase in vegetation growth and aesthetics	Can be implemented with standard technology	\$530,000	Moderate to high	Minimal impact. Standard erosion control measures will suffice to prevent impacts during implementation	Likely some ongoing future cost; considered likely to be minimal	Does not address beach front stamp sands
Soil Cover and Shore Armoring	Effective with reduction of stamp sand erosion into Lake, increase in biodiversity, increase in vegetation growth and aesthetics	Specialized equipment and techniques necessary. Multi-year project.	\$4+ million	Very high	Likely impact to Lake Superior through erosion and suspension of stamp sands	Potentially high	Administrative burdens and costs are prohibitive
Excavation and Disposal	Effective	Generally standard excavation techniques. Possibly some specialized equipment.	70+ million	Very high	Likely impact to Lake Superior through erosion and suspension of stamp sands	Likely low	Administrative burdens and costs are prohibitive

vegetation planting, and new funding will support engineering design work for the campground area to the south. KBIC might not have yet achieved the long-term goals envisioned by the master plan, but with the most hazardous obstacle behind them, the future is bright in Baraga County.

All in all, KBIC rallied a veritable coalition of participants to fund the project and do the legwork. The tribe utilized a variety of funding mechanisms, and

depended on local, regional, and federal employees to get the job done. Today, a rejuvenated lakefront lies where a contaminated wasteland once sat, which is able to be enjoyed by tribe members and the public alike.

More to Do...

With the successful Sand Point remediation behind them, the KBIC looks on to other locations on the reservation. In 2005, KBIC received another EPA

With the successful remediation of Sand Point complete, KBIC received national recognition from EPA for being the first tribal Brown-fields project in Region 5.

brownfields assessment grant that will support the continued progress toward restoring contaminated areas, as will the Tribal Response Program grant. Contamination of the Keweenaw Bay area extends beyond the boundaries of Sand Point to several other designated brownfield sites on the L'Anse Reservation. KBIC's National Resources Department has identified 11 additional locations on the reservation as brownfields, although they differ from Sand Point in the nature of their contamination. However, the tactics developed by the KBIC staff for approaching the successful Sand Point remediation will be valuable experience as they take on new projects. Without a doubt, residents on the L'Anse Reservation should feel optimistic about an increasingly healthier and safer landscape and cleaner watersheds, with guides who will continue to

balance pressing environmental issues with the cultural needs of the people.

Lessons Learned

- **Abandoned areas can help recreate a sense of community:** Sand Point had not only been devoid of plant life, but of human activity too. Removing the contaminated elements allowed visitors to come out of the woodwork; the area now caters to a population that desired it all along.
- **Create long-term goals:** KBIC clearly understood that not all of the development plans could be incorporated into funding provided through brownfields funding. However, the creation of the master plan showed long-term vision and commitment to the project, which makes funders see the project as having more chances for long-term success.
- **Aim high, but settling might be the best choice:** KBIC entertained four possible scenarios for the future of Sand Point. Although the ideal result would have been a \$70-million project that completely transformed the shoreline, the community realized that option was not feasible. While KBIC settled for something less costly, they still got the desired result: a restored environment and renewed healthy lands for the community.

Health Impacts of the KBIC Redevelopment

- Eliminated potential exposures to lead, arsenic, and other environmental contaminants.
- Restored land for outdoor recreation and cultural activities.



Resources for More Information

Keweenaw Bay Indian Community (KBIC) Website

A website with information on KBIC's history, organization, and ongoing activities, and regularly updated information about the remaining brownfields redevelopment sites on the L'Anse Reservation.

www.kbic-nsn.gov

EPA's State and Tribal Response Programs

Funds to support full-time staff and multi-year programs to conduct assessment and remediation efforts specifically on tribal lands. If your tribal community has brownfield candidate site, consider applying for these federal funds.

www.epa.gov/brownfields/state_tribal/index.html



Menomonee River Valley, Milwaukee, Wisconsin

A Boon for Both Industry and Sustainability

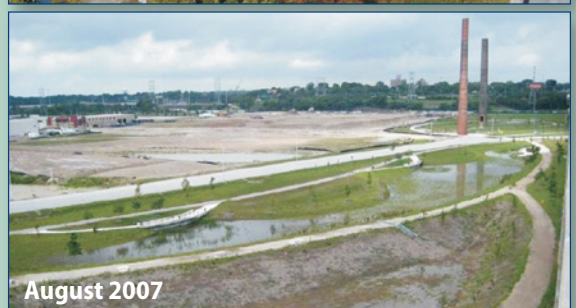
The transformation in the Menomonee River Valley exemplifies how industrial brownfields can become sites for sustainable, thriving industry, while contributing to renewed community life and improving local environmental and public health. This case study might be especially helpful for planners and public health officials interested in sustainable redevelopment techniques and ways of quantifying the public health effects of renewing a large area of land in an urban environment.

Background

Spanning 3 miles and 1,200 acres, the Menomonee River Valley (the Valley) in downtown Milwaukee was once Wisconsin's hub for industrial production. Originally, the Valley offered habitat for a host of animals and plants, but the marsh was filled in during the mid-1800s to create land to support shipping routes, stockyards, tanneries, lumberyards, and other future businesses. For a while, the region prospered, but in the 1960s many Valley-based companies started packing up or closing down. Junkyards and bulk storage facilities replaced once thriving businesses. At its peak in the 1920s, more than 50,000 people were employed in the Valley, but by the 1990s that number had dropped to fewer than 7,000. The area was not only an abandoned eyesore, but also a health hazard to the Milwaukee community. In 1998, the City of Milwaukee identified 68 underused or vacant properties in the Valley with suspected environmental

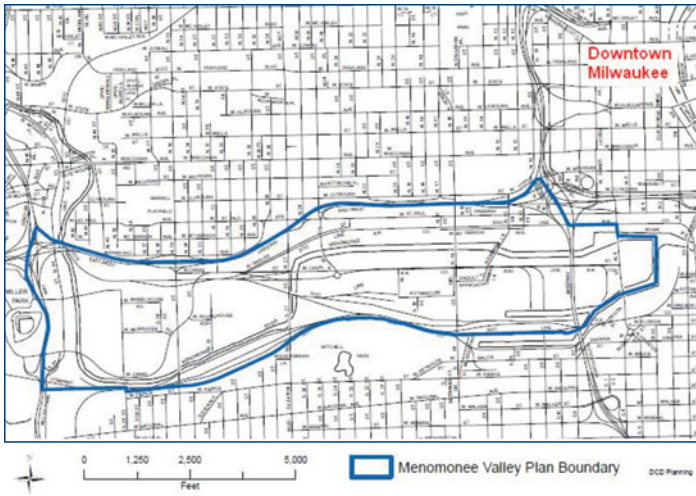


October 2002



August 2007

Bottom: Menomonee Valley Partners, Inc.;
Top: Menomonee Valley Partners and Troy Freund Photography



contamination. The city designated more than 200 acres that, because of its history, still faced unresolved questions about contamination.

Just prior to beginning redevelopment of the Valley in 1998, Milwaukee had an estimated population of 628,000. Approximately 68,000 people lived in the area surrounding the Valley, about 48 percent of whom were minorities. Those who lived there suffered high unemployment rates (13 percent) and widespread poverty (39 percent), with the median household income at only half the Wisconsin average. Not only did the blight issues in the area need addressing, but Milwaukee faced challenges on three different fronts in the Valley: environmental and public health, economic depression, and rundown infrastructure. The city realized that a responsible approach to revitalization could address all three issues. Since ground broke on the redevelopment, public health monitoring has become an increasingly important measurement of success in the Valley as present conditions improve over time.

Creating a Plan of Action

In August 1998, the City of Milwaukee, the Milwaukee Metropolitan Sewerage District, and the Menomonee Valley Business Association (MVBA) published a joint study and plan for the redevelopment of the Valley. The report,

titled “Market Study, Engineering, and Land Use Plan for the Menomonee Valley,” presented a detailed plan to guide progress for the Valley. It included guidelines for managing public investment, creating the most jobs possible, improving environmental conditions, and positively affecting the overall health and well-being of the community. The plan was critical in setting the foundation for future success in the Valley. The report lists eight main goals framing the revitalization effort:

1. Form a public–private partnership to implement the Land Use Plan.
2. Amend the zoning ordinances to facilitate implementation of the land use plan.
3. Complete environmental and soil analyses for all sites suitable for redevelopment.
4. Provide financing for environmental remediation and site improvements.
5. Promote redevelopment in the Valley.
6. Eliminate degrading uses.
7. Develop and improve roadways.
8. Enhance appearance of the Valley.

One month later, EPA awarded a Brownfields Redevelopment Pilot Grant to the City of Milwaukee. The \$200,000 grant marked the first steps in implementing the Land Use Plan designed by the city and its partners. The Pilot Grant goals were four-fold:

- Summarize existing environmental data in the Valley.
- Establish a public–private partnership to encourage redevelopment.
- Conduct an area-wide groundwater investigation.
- Adapt existing regulatory tools to assist current and potential property owners in addressing environmental conditions.

The grant was instrumental for developing a comprehensive environmental assessment, paving the way for

sustainable development. Because of the Valley's proximity to the river and its former life as a marsh, the most substantial component of the Pilot Grant was ground water assessment. To tackle the complex system over such a wide area, the city suggested an innovative approach to sampling. Instead of focusing on ground water conditions on a parcel-by-parcel basis, analysts were directed to use an "aqua-shed" or "area-wide" focus. In doing so, the environmental analysis matched the magnitude of the city's project. Fortunately for the area, sampling indicated that the Valley is free of high levels of contamination. According to the 2001 final report, the contamination that does exist is manageable.

The study included an assessment of public exposure to contaminated ground water. Exposure to contaminated ground water was minimal, mostly because of three reasons:

1. the depth of the ground water,
2. the principally nonresidential use of the Valley, and
3. the fact that drinking water was derived from Lake Michigan and not underground sources.
4. Furthermore, according to the report, the local soil environment is conducive to the natural breakdown of contaminants.

To address the Land Use Plan and Pilot Grant goal of environmental remediation while involving current Valley occupants, the grant helped establish the Menomonee Valley Business Improvement District (BID). Founded in 1999, the BID was originally slated to organize voluntary annual environmental assessment of businesses within the Valley. Since then, however, it has taken on a broader range of responsibilities, including promotion of the Valley plan and local beautification. Today, the BID is still active and works with the local community on a host of projects.

Getting Everyone on Board

Perhaps the most substantial by-product of the Pilot Grant was the establishment of the Menomonee Valley Partners (MVP or "Valley Partners") in 1999. First conceptualized in the Land Use Plan a year prior, MVP realized the broad partnership of every corner of the development community. Among the partners making up MVP are a host of local groups who have a stake in the redevelopment of the Valley: the BID, MVBA, Milwaukee City and County, Sixteenth Street Community Health Clinic, Forest County Potawatomi Community, We Energies, Milwaukee Brewers' Miller Park, and a host of neighborhood associations.

Since its inception, MVP has spearheaded the revitalization efforts in the Valley. Not only does MVP serve as a forum for all members of the development community to act together, but it acts as the major voice promoting the Valley and recruiting new investors. The Valley Partners is unique in that it does not act exclusively to recruit business, nor operate solely to coordinate community-based activities. Rather, MVP was tapped by the city as the organization to handle all efforts of the Valley's management: industry, community, health, environment, and everything in between.

Pushing for Sustainable Development

In 1999, EPA awarded a \$250,000 grant to the Sixteenth Street Community Health Center (SSCHC or "Sixteenth Street") to determine the possibility of sustainable redevelopment in the Valley. As the health service closest to the Valley, Sixteenth Street's involvement guaranteed that the public health of local Milwaukeeans would be a highlight of the revitalization.

A major accomplishment by Sixteenth Street was the 1999 Sustainable Development Design Charrette. A charrette is a brainstorming session for experts in a

Sustainability: Where Land Reuse Also Means Materials Reuse

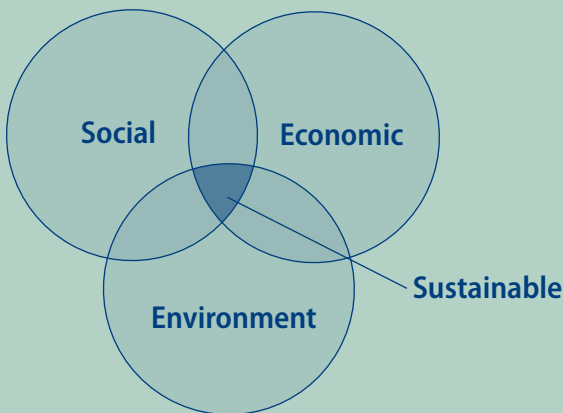
Comprehensive sustainable development involves more than just new construction. A key component of sustainable development in the Valley was properly addressing the remains of the abandoned buildings. These photos show Americorps volunteers teaming up

with the Valley company Falk/Rexnord to collect and refurbish wood from the former Milwaukee Stockyards. Now the wood has a new life in the form of picnic tables in Valley parks and along the Hank Aaron State Trail.



What Is Sustainability?

Sustainable development is not simply “green” building. Although definitions vary, the principal goal of sustainability is to use a balanced approach for land development and resource management. The approach attempts to weigh equally the preservation of the local environment, the prosperity of new or current businesses, and the social needs of local communities. With a balanced approach, sustainable development aims to develop longer-lasting infrastructure that demands less correction in the future. Although localities often set out with the intent of redeveloping brownfields in a sustainable manner, when costs rise, sustainable projects are often the first to go. Milwaukee’s steadfast commitment to sustainable development over such a large area makes it a sterling example for other communities with similar ambitions to follow.



given field to get creative about future plans. In this instance, talented professionals from all sectors of the building community came together to come up with possibilities for the Valley’s future. The participants were tasked with providing a vision for what a functional and sustainable Menomonee Valley might look like well into the 21st century. The 2-day intensive event was a forward-thinking exercise with two major goals. First and foremost, the event attempted to generate ideas for incorporating sustainability and smart growth objectives into the Valley revitalization effort. The city wanted a selection of scenarios for the future activity in the Valley. A second, and perhaps less evident, goal of the event was to present the variety of viable directions to the Milwaukee development community. At the time, sustainable development was considered cutting-edge. Community members needed proof that this revolutionary approach to brownfield remediation was feasible.

Results from the charrette showed remarkable creativity in the concepts, with a range of possibilities: from new schools to utility corridors, “green” buildings to residential complexes. Ben Gramling, Assistant Environmental Projects Coordinator at Sixteenth Street, lauded the results of the charrette: “[The charrette] laid the framework

for bringing business together with the [Department of Natural Resources], environmental organizations, transportation engineers. It allowed all these diverse interests to talk about how the Valley could be developed over time.”

2002 National Design Competition

In 2002, Sixteenth Street again spearheaded an effort to expedite sustainable development of the Valley. Funded by a New Public Works grant from the National Endowment for the Arts (NEA), Sixteenth Street teamed up with a host of partners in the development community to hold the National Design Competition. Partners included both public and private entities, among them the MVP, the Wisconsin DNR, the City of Milwaukee, and many others. Unlike the 1999 Design Charrette, the purpose of the National Design Competition was to select a viable plan to be carried out on the Valley’s West End.

Twenty-five design teams from across the country submitted plans to redevelop the West End. The teams were

charged with designing an economically, environmentally, and socially viable development. Upon selection of four finalists, designs were twice presented before community forums for feedback. The winning design, by Wenk Associates of Denver, conceived what is known as the Menomonee Valley Industrial Center, which has since become the flagship success story for the Valley’s revitalization.

The Menomonee Valley Industrial Center

Perhaps no greater demonstration of Milwaukee’s commitment to economic prosperity in the Valley was the creation of the Menomonee Valley Industrial Center (MVIC). Acquired by the city through eminent domain, the 140-acre area farthest west in the Valley was once home to the Milwaukee Road Shops (the Shops), a more-than-100-year-old rail manufacturing company founded in 1879. The Shops, at one time the third largest rail car complex in the country, closed down in 1985 because of a decline in the railroad industry. Today, all that is left of the large manufacturer are two tall smokestacks, dubbed “The Chimneys.”

Jobs for Low-Income Workers

A major reason for the Valley’s push for the creation of manufacturing jobs was to support living wages for local low-income workers. A 2000 Center on Wisconsin Strategy study found that average wages in manufacturing jobs were 44 percent higher than service jobs, and more than twice that of retail jobs.

Build It and They Will Come

Perhaps the most considerable, yet most understated, element of the Valley’s success was the reconstruction of Canal Street, according to Ben Gramling of Sixteenth Street. “Infrastructure needs must be taken care of to set the stage for private sector development,” he said. The city’s decision to act on that need was a “bold move,” Gramling suggests. Indeed, the construction of the Valley’s major East–West artery began in Spring 2004, well before any company had moved to the

MVIC. Two years prior, the city finished construction on the Sixth Street Bridges on the east side of the Valley. Unlike the other viaducts crossing the Valley, the Sixth Street Bridges were built at street level, enabling access to a redeveloped Canal Road. Together, the bridges and road finally connected downtown Milwaukee with the whole Valley, thereby expanding the market for businesses in both regions.

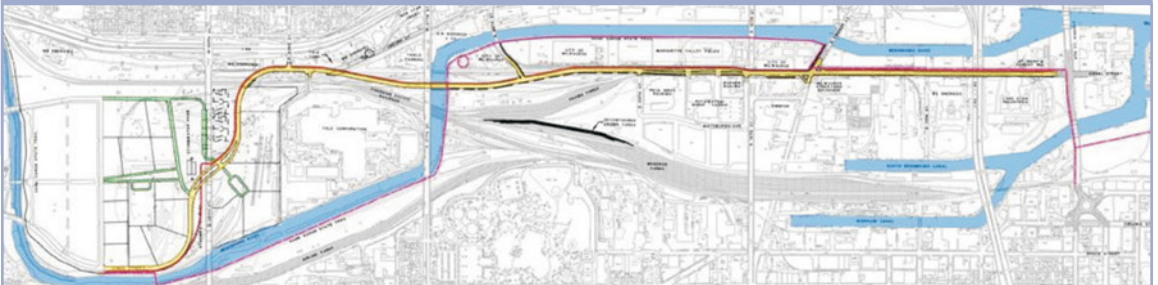




Photo copyright: Troy Freund Photography 2007, courtesy Menomonee Valley Partners

The city's 2007 "mass portrait" was taken beside the Valley's chimneys, which are fast becoming an iconic part of Milwaukee.

"Milwaukee's most visible eyesore is now one of our most viable opportunities to attract jobs to the city."

—Mayor Tom Barrett on the Menomonee Valley Industrial Center (MVIC)

The National Design Competition winning plan divided the 140 acres into 70 acres developed for industry, with the remaining area for public parkland and open spaces. With the area still under industrial zoning, the plan developed plots of varying size (2 to 8 acres) to accommodate both smaller and larger businesses. Part of the success of the MVIC is due to the city's approach to revitalizing the area—emphasizing "jobs development" to redevelop blighted lands in the Valley. With this mission in mind, the development plan structured the area to maximize the number of jobs that could be created within the low-density industrial zoning.

The design plan included sustainability objectives for each business relocating to the Industrial Complex. Companies relocating to the MVIC would need to meet certain guidelines containing 93 criteria for construction, of which 22 were required. These objectives pertained to all facets of the new company's facility: site design, building design and energy use, materials and resources, construction and demolition, indoor environmental quality, and operations and maintenance. Public health played a substantial role in the sustainability regulations; occupational safety,

primarily indoor air quality, had the next greatest value after energy consumption and site design. The goal was for every business in the MVIC to reach 85 percent compliance on sustainability efforts, ensuring that new facilities incorporated the full spectrum of socially and environmentally responsible methods.

Since ground broke on the MVIC, businesses have been flocking to the area. In 2005, the first business to relocate to the MVIC was the nation's second-fastest-growing frozen pizza manufacturer, Palermo Villa, Inc. Other areas in the MVIC were not available for construction until 2007. As of April 2008, only 20 acres within the MVIC remained for sale. Many local companies have relocated to the MVIC because of its attractive location, close to highways and to downtown. A variety of industrial manufacturers, an engineering firm, and a metal supplier are among the companies that have relocated to the area.

Coupled with the business opportunities, the development plan included a large amount of greenspace. Two lengthy tracks of parkland preserve open spaces in the MVIC; one extends into the center of the Valley, and the other borders the river. The developers specially designed the parkland to accommodate up to 100-year flood events. The parks feature tree-lined pathways, soccer fields, and restored wetlands. The expanded Hank Aaron State Trail meanders through the MVIC and continues to the east end of the Valley. The old chimneys from the Shops stand as a towering landmark in the centrally located Menomonee Valley Community Park—a tribute to the history of the Valley. They serve as a reminder of the progress made in the Valley as well as a rallying point for local community events. For instance, in June 2007, the city organized a mass portrait of Milwaukee, with as many people pictured as cared to show up. Where was the picture taken? At the foot of the chimneys. Not only has the MVIC revitalized a depressed

section of the city, but it has effectively changed the face of Milwaukee.

A substantial amount of funding has been provided by public and private entities to support the redevelopment in the Valley. From 1998 to 2008, public investments in the Valley redevelopment totaled \$148 million, while private investments, including the relocation costs for companies moving to the Valley, totaled \$541 million.

Looking Forward: Tracking Impacts and Progress in the Valley

As part of the same 1999 EPA grant that supported the design charrette, Sixteenth Street was charged with monitoring and evaluating the impact of new work in the Valley. As a community health center, Sixteenth Street has a vested interest in monitoring indicators about the public it serves. Early on, Sixteenth Street spent most of its efforts defining the importance of the indicators, and determining what different trends might mean. Not until 2001, when Sixteenth Street received a grant from the Joyce Foundation in Chicago, did the health center start focusing on data collection. Fueled by this new support, Sixteenth Street teamed up with the Center for Urban Initiatives and Research (CUIR) at the University of Wisconsin-Milwaukee (UWM) to formalize their research. This new partnership became the Menomonee Valley Benchmarking Initiative (MVBI).

“The whole idea is that we have these lovely plans and objectives, all of these documents and visions,” said UWM Associate Professor and one of the MVBI’s Project Directors, Chris DeSousa. “What we wanted to know is simply: were things getting better or were things getting worse?” To find out, the MVBI created a system to monitor and evaluate social, environmental, and economic changes taking place in the

Debris Management: From Gross to Green

Not all brownfield debris can be recycled into picnic tables. Much of the unusable remnants from the Milwaukee Road Shops site was collected on the south side of MVIC in a park known as Airline Yards. These areas were then filled in, covered with native foliage, and now stand as green earthen mounds reminiscent of the glacial drumlins of Milwaukee’s past. In addition, these elevated areas were built to accommodate future pedestrian bridges from the higher land across the river.

Today, the Airline Yards park is 23 acres large and features a half-mile long riverbank. The two parks in the MVIC have restored previously non-existent access to the river. Kayakers, canoers, and fishermen can now all take advantage of this urban oasis. Landlubbers need not feel excluded, however; playfields have been constructed in the area. The park has even elicited interest from the Milwaukee Police Department, which has suggested placing an equestrian facility for mounted officers on the east side of Airline Yards.

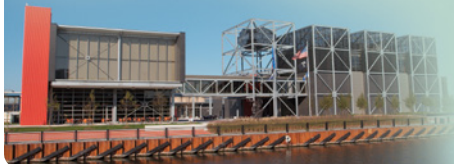


Photos: Menomonee Valley Partners

Bikes Strike a Wheel of a Deal

One of the newest neighbors to the Menomonee River Valley is Milwaukee’s own Harley-Davidson Motor Company. In July 2008, the iconic American motorcycle manufacturer opened the doors of a brand new museum facility on the eastern end of the Valley. Two years in the making, the three-building facility houses collections of Harley-Davidson motorcycles of all eras, as well as other kinds of HOG memorabilia. Keeping in line with the city’s plan, the Harley Museum has no shortage of “green” amenities. They include permeable pavement, reflective roofs, and landscaping using native shrubs and trees. Furthermore, as with many other businesses in the Valley, Harley-Davidson

sponsors many of the community events including the annual Hank Aaron State Trail 5K Run/Walk.



Photos: Dori (<http://commons.wikimedia.org/wiki/User:Dori>).

Kudos for MVIC

In 2009, the MVIC and Community Park was recognized with three prestigious awards:

- The EPA Region 5 2009 Phoenix Award, an award sponsored by EPA, the ICMA, and others, honoring excellence in brownfield redevelopment.
- The 2009 People's Choice Phoenix Award, selected by professionals in the brownfield redevelopment industry attending the 2009 Brownfields national conference.
- The 2009 Brownfields Renewal Environmental Impact Award, sponsored by *Brownfield Renewal* magazine.
- The project had already earned accolades in 2006, when the Sierra Club named it one of "America's Best New Development Projects."

Valley. By collecting data on twelve different issues, researchers could identify changes that were occurring, either directly or indirectly, as a result of Valley revitalization. The twelve issues monitored are:

Community

- Housing
- Crime
- Health
- Arts & Events

Environment

- Water Quality
- Air Quality
- Land Cover & Habitat
- Flora & Fauna

Economy

- Employment
- Commercial Property
- Business
- Infrastructure & Access

The indicators used in assessing these topics are varied: birth rates, land cover, household value, and health insurance coverage among many more. Using 57 of these indicators, the MVBI hopes to assess how successful the city was in creating a sustainable community. In addition, these data help Sixteenth Street determine the quality of life of the community for which it provides clinical care. However, some members of the community and several businesses in the Valley were skeptical of the MVBI's motives. "It's not common to take these measures," DeSousa said. After a request from the Valley Partners explaining the nature of the study, the companies volunteered their information.

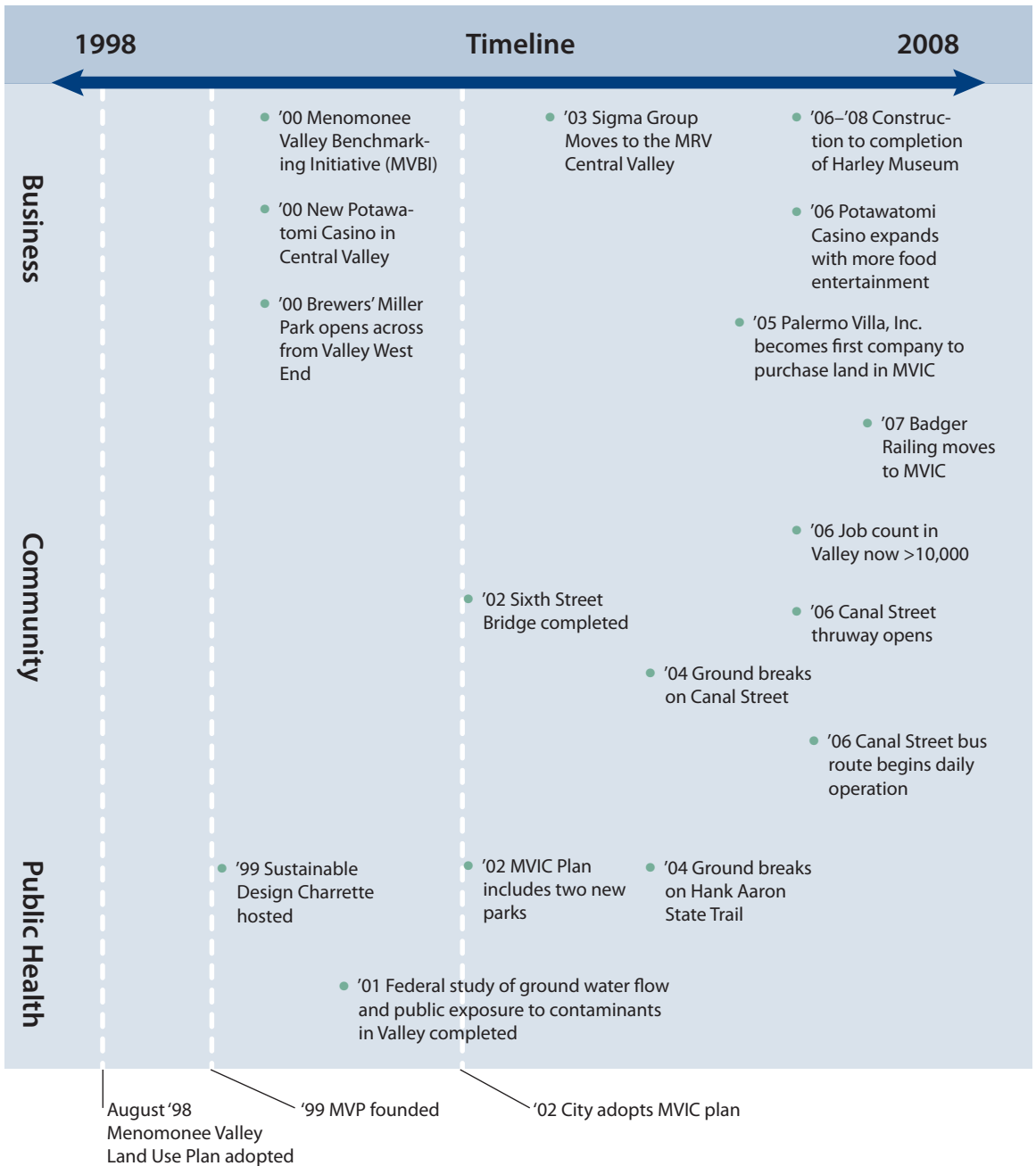
Ultimately, the data collected are synthesized, analyzed, and published as a comprehensive report on the conditions of the Valley. To date, the MVBI has published two State of the Valley Reports, one in 2003 and another in 2005. Despite being in the nascent stages of public health monitoring, the MVBI has developed some preliminary

results. The 2005 report compared its data with that of the 2003 report. The authors assessed the performance of each indicator over the short time span; these studies helped characterize the indicator data as well as identify some initial quantifiable changes in the Valley. Results were mixed. Although many indicators showed beneficial changes (e.g., decreases in fine particulate matter concentrations, decreases in lead poisoning incidents), other indicators were trending negatively (e.g., increases in Valley crime, worsened index of biological integrity). Of particular concern are certain data demonstrating the poor air quality in the region. Although generally trending in a good way, the levels of certain toxic air pollutants, such as formaldehyde and acetaldehyde, remain above EPA-defined risk factor thresholds.

Even though the MVBI has not proven immediately pertinent to current Valley planning, its importance should not be underestimated. The 2003 report provided a baseline for the indicators in the Valley, so that long-term trends can be measured over the coming years. As the region continues to evolve, the indicators will prove useful in assessing the effect that the revitalization effort has had since the early 2000s. The next report, slated for publication in 2012, will include U.S. Census data reflecting changes experienced in the Valley.

Lessons Learned

- **Establish a clear plan of action:** Before any construction began, the city partnered with local businesses and community members to create a plan of action. By establishing goals early, with all parties agreeing, Milwaukee created a foundation from which more definitive plans could be made. Developing a list of firm priorities provided direction for the Valley, and guiding criteria for what could and could not be done in the revitalization process.
- **Get everyone on board:** The creation of the MVP was fundamental to



the project's success. With all sectors of the development community helping operate the MVP, business, public health, and local community interests were all represented. With multiple groups having a stake in decisions, action by the MVP carried more weight. The partnership created a forum for establishing consensus among what could have been conflicting interests.

Although the initial Land Use Plan was organized by the city, the success of the 1999 Design Charrette and 2002 National Design Competition were largely organized by community members such as the Sixteenth Street Community Health Center. Allowing entities already entrenched in the community to participate in the process can make redevelopment less

Health Impacts of the Menomonee River Valley Redevelopment

- Provided greenspace and recreational opportunities.
- Created new jobs and promoted economic growth.
- Helped ensure safe work environments in new businesses.
- Resulted in partner-collected baseline data to track indicators of community health.



contentious and often more effective. Thus, it is important to **incorporate local interests** into the development process.

- **Be patient and persistent:** Milwaukee made a commitment early on to redevelop the Valley in a sustainable manner, despite the expense and difficulty it demanded. Although many municipalities intend to make brown-field remediation sustainable, those plans are often put to rest in favor of quick solutions. Similarly, the city is committed to creating new manufacturing jobs and preserving the Valley's industrial roots.

Milwaukee had a 4-year gap between developing a Land Use Plan and

finally settling on specific designs for the MVIC, let alone breaking ground on it. Patience and perseverance enabled substantial industrial growth and environmental remediation, while leaving all participants satisfied with the result.

- **Consider other pathways to grant money:** The National Design Competition, which was responsible for the highly successful MVIC, was mostly funded by a grant from the NEA. Exploring all potential funding sources, however unrelated they might seem, improves the chances for redevelopment efforts to receive support.
- **Measure progress:** Consider setting up systems early on in the redevelopment process that can be used to measure and evaluate improvements in community health. Because only baseline data have been compiled at Menomonee Valley, the full value of this exercise is not yet realized.

Resources for More Information

Menomonee Valley Partners, Inc.

The consortium of Menomonee Valley businesses, government agencies, neighborhood associations, and nonprofit groups that spearheads the revitalization effort in the Valley. Contains a large selection of literature (updated frequently) dealing with progress and developments.

www.renewthevalley.org

Menomonee Valley Land Use Plan

A nearly 200-page document located on the Milwaukee Department of City Development website. This landmark report steered the revitalization effort.

www.mkedcd.org/Planning/plans/valley/MRV.pdf

EPA Report From Initial Pilot Grant

A summary of the results from the initial grant given to Milwaukee by the EPA. The summary contains descriptions of the first steps that paved the way for the Valley's success.

http://www.epa.gov/brownfields/success/showcase/sc_milwaukee.pdf

Menomonee Valley Benchmarking Initiative (MVBI)

Describes the goals of the MVBI. Both the 2003 and 2005 State of the Valley Reports are free and available online.

<http://epic.cuir.uwm.edu/mvbi>

Menomonee Valley Design Guidelines

Checklist-style form defining the sustainability conditions to be met by Valley businesses.

http://www.renewthevalley.org/media/mediafile_attachments/06/46-guidelinesfinal-printableversion.pdf



Moore Square Museums Magnet School, Raleigh, North Carolina

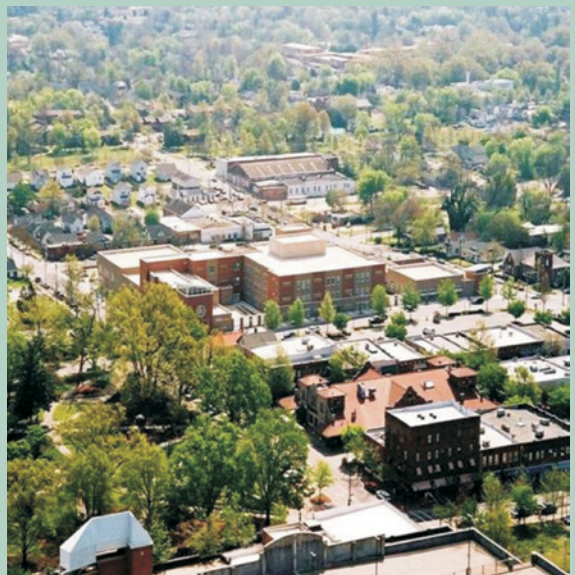
Planning Plus Commitment Equals a Healthier Downtown

Redeveloping a small piece of land in downtown Raleigh equals a shot in the arm for both “smart growth” and community health. Now a central part of the downtown area, the school’s construction challenged convention by placing a brand new facility in a high-density area. Planners, working with educators and the community, developed an innovative school design that effectively fosters a healthful learning environment and uniquely integrates the school into the broader urban fabric.

Background

Located in the heart of downtown Raleigh, North Carolina, Moore Square is a historic section of town situated just four blocks southeast of the state Capitol building. For many years, the low-income neighborhood was plagued by blighted properties that fostered drug-related crime. Now, thanks to the City of Raleigh’s vision, all that has changed.

In 1982, the City of Raleigh adopted the Downtown East Redevelopment Plan, which led to the rejuvenation of derelict parts of downtown over the next 20 years. By 2000, a swelling population in the Research Triangle region of North Carolina and a dire need for schools led to innovative design choices that were a part of building Moore Square Museums Magnet Middle School. Often referred to as “M2M3,” the \$13.4 million school has become a shining example of successful smart growth. The placement of the school, which fits into the broader plan for the Moore Square



The Moore Square Museums Magnet School stands as a testament to the rebirth of downtown Raleigh.

neighborhood, not only benefits young students, but has stimulated business and brought new residents to the area.

Remediating the Site

The city block where M2M3 now stands was once used for a host of different purposes, including a gas station, a rubber factory, an auto repair shop, and even a prison. The community seemed to be held captive by poor economic prospects and an unhealthy urban environment. The site required substantial assessment and remediation. The relics left behind by old operations

even delayed scheduling. In May 2000, with development already underway, the discovery of petroleum-contaminated soil halted the project for months. Affected soil was identified and removed to a depth of 30 feet before construction started up once more in November 2000—a six-month delay. The holdup pushed back the anticipated opening of the school one more academic year to July 2002, when M2M3 finally opened with its year-round school calendar.

A School Design: Breaking the Mold

A typical middle school in North Carolina might sit on as much as 35 acres. When the designers of M2M3 were faced with building on a 4-acre plot of land that had a 25-foot grade, they had to dispense with conventional ideas. Innovative solutions were needed to solve the unique situation. Planners set ground rules by identifying certain essential features for the new school: science labs, cafeteria, and gymnasium. On the other hand, facilities for extracurricular activities were seen as expendable. With a bus and parent drop-off area tucked behind the front of the school, M2M3 preserved valuable acreage by letting the school abut the street. In addition, that same drop-off area doubled as an outdoor basketball court and recreation area. Multi-use spaces help minimize the “sprawl” effect that a larger school might have, without sacrificing certain amenities. Although the final design of the school did not include a track, auditorium, or baseball diamond, planners managed to include two open fields for sports and physical education, plus the basketball court—ample facilities for a 600-student middle school. Unlike most other middle schools, M2M3 is only one of two Raleigh middle schools to offer an intramural program in place of competitive sports. Any student who wishes to be a member of sports team can do so, resulting in greater involvement in team sports. The vertical layout of the school building engages students in physical

What Is “Smart Growth”?

Smart growth is an urban planning movement that seeks to counteract urban sprawl. Its focus on high density and preservation of open spaces is supported by proponents of sustainable development. When building new construction, smart growth proponents urge developers to accomplish the following:

- Produce a range of housing choices.
- Create walkable neighborhoods.
- Encourage community and stakeholder collaboration.
- Foster distinctive, attractive communities with a strong sense of place.
- Make development decisions predictable, fair, and cost effective.
- Mix land uses.
- Preserve open space, farmland, natural beauty, and critical environmental areas.
- Provide a variety of transportation choices.
- Strengthen and direct development toward existing communities.
- Take advantage of compact building design.

Incorporating these design goals help cities with smart growth ease traffic congestion and resist urban decay. Smart growth shifts focus away from a car-focused transportation system, in favor of pedestrian and biker friendly cities. These approaches benefit public health, not only through active lifestyles, but also through improved air quality and decreased pollution.

Source: www.smartgrowth.org





The basketball court and recreational area also serves as pick-up and drop-off area for parents driving their kids to school. Photo: Dover, Kohl & Partners Town Planning

activity because they must walk up and down stairs to get to class. With these facilities, the school helps promote active lifestyles among Raleigh's urban youth.

Although many of the school's health benefits are incorporated into the school grounds, some are a result of its proximity to a wealth of local amenities. Studies have shown that using a variety of transportation choices, such as public transportation, can positively impact community health by reducing traffic congestion and the air pollution associated with it.³ The Moore Square Station Transit Mall, the central terminal for Raleigh's bus system, is located just a block and a half from M2M3. Since the magnet school has no set geographical district, the nearby station helps teachers, parents, and students get to M2M3 from all across Wake County.

A problem with being located in downtown Raleigh is that M2M3 fronts a high-speed road. To minimize risks to both students and parents dropping off students, planners instituted on-street parallel parking to create a buffer zone. Wide sidewalks lined with trees add to the physical and visual barrier between the school area and the busy street. An important part of implementing healthy

design plans is making those health options as safe as they are beneficial.

Top Honors for a Top Project

In September 2003, the City of Raleigh bestowed the Sir Walter Raleigh Award for Community Appearance to M2M3. The new school was recognized for its beautifying effect on downtown Raleigh and for being cost-conscious in its construction. An independent jury made up of members from the development community selected M2M3 as the best institutional development to take place in Raleigh that year. The jury expressed appreciation for the positive impact the school will have on increasing downtown residency.

In November 2003, the success of M2M3 was nationally recognized by EPA for the smart growth principles incorporated into the school's design. Only five projects received EPA's National Smart Growth Achievement Award that year, further demonstrating how exceptional M2M3 is. "Schools can serve community goals other than education," said EPA program manager Tim Torma, who has experience with school programs. As evidenced by M2M3, schools have the ability to promote healthy lifestyles

An Innovative Curriculum to Engage Students

The unconventional design of the building was not the only feature at M2M3 that challenged the norm. The Wake County Public School System chose to make the M2M3 a magnet school, attracting students whose parents saw value in the alternative curriculum. Aside from using the modified, year-round school year, M2M3 has instituted the Paideia curriculum. This teaching philosophy promotes "active learning," where teachers depart from typical didactic methods to allow interactive exploration. The result translates into less time sitting in classroom seats and more time spent actively collaborating on projects, both in and outside the school itself.

³ U.S. EPA, Schools for Successful Communities: An Element of Smart Growth, September 2004.

New School and New Partnerships

The construction of M2M3 and the arrival of its innovative curriculum have helped get students and teachers involved with local groups in Moore Square. As a Raleigh hotbed for artists and creative design, Moore Square is home to a variety of groups that can complement student learning outside the classroom. Partnerships outside of the M2M3 building itself have fostered close working relationships at the North Carolina Capitol Building; the North Carolina Museums of Art, History, and Natural Science; the Burning Coal

Theatre; and the Contemporary Art Museum (CAM). In one after school program called “Moore Square: Past, Present, and Future,” educators from the CAM guide sixth graders from M2M3 in learning about Raleigh’s revitalization and redevelopment. Students work together to develop their own ideas and contribute to the ongoing dialogue about Raleigh’s future. Through the program, students meet periodically with developers and civic groups to provide their input to professionals involved in the decision-making process.

“Moore Square Museums Magnet Middle School is an interactive learning environment that expands beyond the classroom walls to the museums, the community and the world.”

—M2M3 brochure

through walkable communities and greater citizen-community interaction.

In 2005, M2M3 received yet another award: The School Planning & Management Magazine and the Council of Educational Facility Planners International (CEFPI) honored the school with the Impacts on Learning Award, along with several other schools nationwide. This award recognizes innovative design and approaches that enhance the learning environment. Specifically, the judging panel cited M2M3’s use of existing urban infrastructure and prospects for continued revitalization as reasons for the award.

Lessons Learned

- **Empower residents to make good health decisions:** Responsible community health decisions do not just

include physical health, but also the mental health and societal benefits associated with great educations. Creating safe school environments helps shape informed young citizens who will grow up to make responsible choices—including healthy ones.

- **Don’t always make it something taxable:** While communities with blighted lands often hope to expand their tax bases by developing new residential or commercial properties, building desperately needed civic establishments, such as schools, has the potential to encourage growth far more quickly. Even without increased tax revenue, cities might find that going one step back also means going two steps forward.
- **Unconventional plans can lead to impressive results:** Revitalizing

Urban Schools, Smart Growth, and Public Health What’s the Bottom Line?

The compact and community-focused design of a “smart growth” school connects it to its students and the neighborhood. Based on a 2002 CDC report, 80 percent of children do not walk to school. The report cited distance as the greatest barrier to walking to school. In addition to the simple health benefits of daily walking, fewer cars and buses idling by the school mean that students are at a lower risk for respiratory ailments. The healthy habits that students develop through their daily “commute” can last a lifetime. In turn, they are more likely to pass on healthy lifestyles to their own children.

The M2M3 curriculum helps bolster these health benefits by connecting students with valuable learning venues just outside the school’s walls. Students walk to nearby museums and other facilities on a nearly daily basis. Even if they do not walk to school, they become accustomed to regular physical activity.

blighted urban buildings does not always mean creating new residences or retail establishments. Civic amenities, such as schools, can improve local health and stimulate growth. Consider a city's local needs and the possibility for building schools, recreation centers, or community gathering places in place of or in addition to traditional revitalization products.

Health Impacts of the M2M3 Redevelopment

- Utilized smart growth principles in design of the school.
- Promoted physical activity.
- Removed contaminated soils.



Resources for More Information

Moore Square Museums Magnet Middle School

The main website for M2M3. This site contains information on school activities and curriculum philosophy, as well as some information on the school's history and development. The site also contains links to Moore Square community and cultural information.

<http://mooresquarems.wcpss.net>

Smart Growth Online

A resource for up-to-date information on the smart growth community. This website is maintained by the Smart Growth Network, a partnership of nonprofits, developers, and government entities that "works to encourage development that serves the economy, community, and the environment."

www.smartgrowth.org

CDC Web page on Children's Health and the Built Environment

A web page with useful information on the relationships between the built environment and the health of children. The Web page contains information specifically from the CDC, as well as links to other useful resources.

www.cdc.gov/healthyplaces/healthtopics/children.htm

KidsWalk-to-School Program

A community-based initiative developed by CDC that advocates children biking and walking to school. The website contains presentations and descriptions of childrens' health benefits. Also included are useful links, resources, and a "quick start" guide to advise municipalities in how to encourage the initiative in their area.

www.cdc.gov/nccdphp/dnpa/kidswalk/index.htm

U.S. EPA Website on Smart Growth

A website describing the basic tenets of "smart growth" designs. Links provide resources regarding funding and grant possibilities for communities interested in smart growth projects.

www.epa.gov/dced

Contemporary Art Museum (CAM) Website

A blog of events as part of CAM's after-school program "Moore Square: Past, Present, and Future." Educators from the program occasionally update the site with written descriptions and accompanying pictures of student activities.

<http://camdowntown.blogspot.com>



Photo: Dennis Frisby

Treasure Valley Institute for Children's Arts, Boise, Idaho

Contaminated Church Converted to Arts Center for Children

For most communities, the presence of a local abandoned church-turned-meth-lab does not spark the notion of a future hub for children's learning, well-being, and artistic growth. A vision of what could be is becoming a reality with the combined efforts of a determined organizer, health officials, engineers, designers, architects, and a host of volunteers young and old. This case study shows how a community is persevering despite funding challenges.

Background

Built in 1907 and listed in the National Register of Historic Places, Immanuel Methodist Episcopal Church in Boise does not seem like a likely brown-fields redevelopment candidate. Despite being a fixture of the quaint Hyde Park neighborhood in Boise's North End for the better part of the 20th century, the church congregation began shrinking in the 1970s when another local Methodist church opened its doors. By the end of the decade, the property was sold to a private owner, who intended to convert the building into apartment units. That plan never came to fruition. In the decades following, the former church changed hands again and ultimately fell into disrepair from of general neglect and insufficient maintenance. The empty building had been so ignored that by the 1990s, it had become a haven for methamphetamine (meth) use and production. The

so-called "meth lab" was subject to multiple searches, seizures, and arrests as a result of meth production and meth use. In addition to being a highly addictive and harmful drug on its own, typical production of methamphetamine creates toxic, explosive, and flammable by-products and leaves behind harmful meth residue. The result was that by 2007, the church was found to be contaminated with toxic materials—lead paint, methamphetamine, and suspected asbestos—from throughout its history.

A Local Artist Takes the Reins

For years, a nearby resident and former professional ballet dancer, Jon Swarthout, had a vision of what the church could be. He could picture not only a renovated building, but the many programs the church could house to enrich the lives of local community members.

Dangers of Methamphetamine

Methamphetamine, or simply “meth,” is a highly addictive psychostimulant drug, which causes many users to feel “hooked” after just one dose. Its use, even over a short time, can create numerous physical health effects, particularly due to poor hygiene associated with extended use: skin abscesses, “meth mouth,” and other effects. Withdrawal effects for chronic users can include depression and excessive eating and sleeping. Its addictive nature, the dangers of its production and use, and the crime associated with its distribution make the presence of meth a major community risk.

The effects of meth from different doses and exposure pathways are well documented in scientific literature. This means that toxicologists can have a good idea of how harmful a particular contaminated site might be.

As founder and director of the educational dance initiative called Dance Rascals, Swarthout has experience in building children-focused educational programs involving the arts. Dance Rascals, founded in 1996, grew quickly and soon became the Children’s Dance Institute in Boise. The Institute’s programs enjoyed a reputation for fun, empowering, and educational experiences for young children of preschool to elementary school ages. Yet Swarthout’s vision for an expanded arts facility for children had yet to find a home. As a resident of Boise’s North End, he kept thinking about the enormous potential of the old rundown church.

After two years, the previous owner of Immanuel Church agreed to sell the neglected building. Swarthout made a low offer, and the owner, whose own kids had been students at the Children’s Dance Institute, accepted the price at hundreds of thousands of dollars below other potential offers. The newly acquired building would serve as a base for Swarthout’s even broader educational initiative under its new name, Treasure Valley Institute for Children’s Arts (TriCA). The 18,000-square-foot facility would not only provide the dance spaces that were at the core of the successful dance program, but would allow for an

expansion of classes, including music and culinary and visual arts.

The move by TriCA signaled an important shift in the fate of the building. In 2003, Preservation Idaho, the Idaho historic preservation council, had placed Immanuel Church on its list of threatened and endangered historic places in the state. The planned renovation of the church would bring much needed repair to a blighted building in an otherwise desirable residential neighborhood. TriCA’s future home would give a boost to the lives of local children, as well as help restore the neighborhood’s commitment to historic preservation and community health.

The Extent of the Problem

With a history of drug-related arrests and a visibly worn-out structure, the building showed signs of having likely health hazards. In September 2007, just 3 months after the purchase, Idaho’s Departments of Health & Welfare and Environmental Quality walked through the property to assess possible hazards to those who had volunteered to clean up the building and office staff in the building. Leaders at TriCA were concerned that weekend volunteers and the two full-time employees at the site were being exposed to a harmful, or at least risky, environment. What the state health officials found raised red flags for both structural safety and human health.

Past methamphetamine use led to several hotspots within the building, such as around kitchen appliances, where it appears that meth had been “cooked.” Other areas also showed evidence of the toxic substance. In addition, the ventilation system from the kitchen to elsewhere in the church had residual methamphetamine. Even portions of insulation that were exposed to the ventilation system had high amounts of the drug itself. Certain parts of the building had meth concentrations up to 138 µg/100 cm², more than a thousand times the cleanup standard for the State of Idaho.

The contamination issues did not end there, however. Sampling revealed the presence of lead paint—along walls and floors inside the building and within soil outside the building. Lead concentrations on the basement floor were nearly six times the EPA clearance standard for interior floor surfaces in public housing. The discovery of lead contamination in particular played a critical role in procuring funds for remediation, because the levels exceeded the allowable HUD standard for lead. The health team identified floor tiles that were suspected of containing asbestos, a hazardous mineral once widely used inside buildings, though this was later ruled out.

On the Fast Track to Recovery

Soon after TrICA had purchased its new home, Keith Donahue, the father of one of Swarthout's students, put an idea on the table. Being familiar with Idaho's Department of Environmental Quality (IDEQ) Brownfields Response Program and the associated revolving loan fund that supports revitalization projects around the state, he suggested that TrICA pursue grants from IDEQ to support remediation of the church building. Little did he know that Kai Elgethun, health assessor at the IDEQ, had already begun a health assessment and was coordinating with IDEQ colleagues involved with the Brownfields Response Program. Not long after Elgethun's first walk-through to assess health hazards at Immanuel Church, a meeting took place between Swarthout and Aaron Scheff, the head of the IDEQ Brownfields Response Program. This state-run program, together with Idaho's Economic Development Districts, constitutes the Reuse Idaho Brownfields Council (RIBC), which manages the state's \$3 million revolving loan fund, established by EPA.

At the meeting, Elgethun recommended that the church be considered for brownfields funds. Given the financial difficulty in remediating such extensive

Proactive Efforts to Assess Health Concerns

Jon Swarthout directly sought the counsel of the Idaho Department of Health and Welfare (IDOH), Bureau of Community & Environmental Health, to make sure everyone had a clear picture of the condition of the building. The bureau, under a cooperative agreement with ATSDR, is charged with evaluating the potential for harmful exposures associated with environmental contamination. Swarthout also contacted the state brownfields program and inquired about the availability of environmental sampling data. Based on sampling results for lead, asbestos, and methamphetamine, the health team examined potential exposures within the building and researched the possible impact of those exposures. Though "no national guidelines [exist] for evaluating health effects from exposure to materials in homes or buildings where methamphetamine has been smoked or manufactured," the team utilized scientific literature to help assess potential hazards. The good news was the conclusion that possible past exposures to volunteers and other workers in the building were not likely harmful, though the team did emphasize the importance of removing the residual lead and methamphetamine contamination to protect the health of the children and staff slated to use the building.

contamination in the building, brownfields funding provided a potential source of support to get the work done quickly. Donahue helped prepare a proposal on TrICA's behalf, citing both lead and methamphetamine as posing significant risks to the future occupants. Because one contaminant exceeded IDOH standards, and the other exceeded HUD standards, both were eligible for cleanup using RIBC funds. This proposal got the ball rolling on cleaning up the contamination present in the building.

RIBC accepted the proposal within weeks, and a \$377,000 low-to-no interest loan allowed remediation plans to proceed quickly. By December of 2007, Phase I remediation had begun.

Fundraising and Barn Raising

On November 3, 2007, on the front stoop of the historic church, Swarthout organized a community kickoff event to introduce the planned future for the church. As a community-focused organization that was soon to become a local landmark, TrICA hoped to get

In Their Own Words...

*"We were familiar with the site. And we felt that we knew enough about [TrICA] that it would be a good candidate that was **committed to doing something in the community.** They weren't just going to buy it and flip it or try to redevelop it into something that wasn't appropriate. Appropriate redevelopment is a big part of the [brownfields] process."*

*—Dr. Kai Elgethun,
Health Assessor*

On the inside of the building is a prominently displayed quote, a relic from the building's former years as a church. It reads, "Her light hath gone while it is yet day."

In many ways, that quote describes the disrepair of building itself, but with no doubt a bright future ahead.

"The health effects of meth residue on children aren't that well understood. We felt we should take a conservative approach and clean up to the IDOH standard. [...] The target audience drove the concerns and the eventual cleanup decisions."

—Aaron Scheff, Brownfields Program Manager



additional support from local residents for both funds and elbow grease. In describing the effort, Swarthout appealed to Idaho's pioneer legacy by rounding up volunteers for an "old fashioned barn raising." In this way, Swarthout was able to recruit numerous volunteers and private funds. Within 4 months, TrICA had received a hefty \$100,000 grant from the J.A. and Kathryn Albertson Foundation to kick off a capital campaign. In-kind services from architects, lawyers, and landscapers totaled more than \$400,000. By virtue of its nonprofit status and effective outreach to the IDEQ, TrICA procured a combined \$300,000 in grant money to repay that loan. These funds mean that TrICA need only raise \$77,000 to fully repay the loan for the Phase I remediation.

The pro bono work conducted by engineers and architects has been crucial in defining how the space will be used once remediation is complete. Design experts from the community have put together floor plans for the space, including plans for a dance room, an art gallery, and a music studio. Unfortunately, because of the extent of the contamination in the building, indoor work by volunteers has stalled at the design stage. But while TrICA has had to keep turning down volunteers for indoor work, some got their hands dirty in the outdoor garden areas. With donated plants from local nurseries, a group of volunteers gave the outdoor areas a much-needed facelift.



Photo, left: www.northend.org/content.asp?cat=9&id=27; Photo, right: Jon Swarthout

As of late 2009, volunteers had donated an estimated 1,800 hours of their time and tens of thousands of dollars worth of supplies. One donation consisted of 300 theater seats, recycled from a Catholic school in Utah. Dozens of high school volunteers from both Boise and Salt Lake City pitched in to help load, unload, and transport the chairs, which will be installed during renovations.

The local community feels so vested in the project that even the youngest neighbors feel compelled to help. A local Girl Scout Brownie Troop donated profits from its annual cookie sales to TrICA. In addition, the troop gave up snacks at their weekly meetings for several months in favor of passing along the money saved to TrICA. Yet another campaign brings young children into the fold, encouraging them to do chores around the house to earn donations for \$5 roof shingles for the building, Swarthout said. These large and small acts of generosity have helped the community reclaim the building as their own, instead of as the maligned "crack house" as some citizens once called it.

From Toxic Disgrace to Dancing with Grace

Immanuel Church is no longer the burden it was back in the 1980s and 1990s. Although restoration and renovations still have a way to go before completion, all of the methamphetamine and lead contamination is slated for completed

removal. A clean building is especially important because young children will participate in activities there. The high levels of lead posed potential risks of neurological and other health problems in children.

One particular area contaminated with lead was the upper part of the main hall of the church. The wood beams and flooring, which had been installed after the church disbanded, needed to be remediated. A structural review by engineers determined that the beams lacked structural integrity and needed to be reinforced. This additional expense turned out to be a blessing in disguise for TrICA. The structural risks were too great to withstand the remediation process; resolving the structural problems was considered part of the remediation plan payable through brownfields funding. As a result, TrICA will not only get a building free of toxins, but one of restored structural integrity—essentially amounting to a “two-for-one” loan.

With that final stage of remediation finished, TrICA is moving on to its more ambitious (and costly) stage of development, the multimillion dollar renovation to build the ceramic and art studios. The culinary center and library will require substantial assistance from private donors and the community. But with such support, this organization will continue on the path toward an active, toxin-free, and healthier future.

Lessons Learned

- **Certain brownfields grants will not provide funds for just methamphetamine contamination:** TrICA would not have received any financial support from the state Brownfields Response Program had there not been lead paint contamination. There are no federal standards for methamphetamine contamination, and not all federal remediation funding will support just meth cleanup. This detail is important for more recent blighted



Photo: Jon Swarthout

lands that might not have common contaminants like lead or asbestos, but still might have suffered the ill effects of drug contamination.

- **Assessing health hazards early in the process is critical to protecting the safety of building dwellers:** Understanding the nature and extent of contamination and possible hazards to human health is a critical piece of any development plan. Involving public health specialists early in a project helps identify any imminent health hazards or possible hidden hazards.

According to Health Assessor Dr. Kai Elgethun, meth lab busts reached a peak in the early 2000s. Nonetheless, contamination resulting from drug use remains a problem. Identifying and cleaning up meth contamination, however, depends mostly on the owners of affected buildings reporting it. In Idaho, IDEQ is powerless until local law enforcement busts and officially reports a lab.

Dance Your Way to Better Health

The CDC reports that regular moderate aerobic exercise each week can help a person lose weight, improve cardiovascular well-being, and provide many other health benefits. Its active nature and recreational value make dancing a great opportunity for people, especially children, to engage in regular exercise. Studies have shown that regular dancing among children can help maintain healthy body mass indices and improve cardiovascular health.

TrICA offers a variety of classes in theater, musical theater, classical dance styles, and modern dance styles that accommodate a range of children ages. TrICA’s Family Club Night, a social dance party, serves as a cross-generational event to get people moving, grooving, and becoming more active!

Source of health study: R. Flores, Dance for health: improving fitness in African American and Hispanic adolescents. *Public Health Rep.* 1995 Mar–Apr; 110(2): 189–193.

www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1382101

Health Impacts of the TrICA Redevelopment

- Reduced exposures to environmental contaminants such as lead and methamphetamine.
- Eliminated physical hazards in the building.
- Increased learning opportunities and well-being of neighborhood children.



- **Brownfields funding can have peripheral benefits:** The grants and loans provided to TrICA also contributed to repairing structural damage. If a property is structurally unsound, it is possible that brownfields grants will provide for remodeling prior to remediation. This possibility might be a suitable alternative to total demolition and then starting from scratch.

Resources for More Information

Treasure Valley Institute for Children's Arts (TrICA)

A website that describes TrICA's artistic programs and vision for the future. The main page of the site features a short video documentary highlighting the organization and its current status at Immanuel Church.

<http://www.trica.org/>

Idaho Department of Environmental Quality (IDEQ) Brownfields Response Program

A website devoted to IDEQ, the principal state environmental regulatory agency in Idaho. IDEQ is responsible for providing part of the grant money that TrICA used to pay down borrowed money from the revolving loan fund.

www.deq.state.id.us

Reuse Idaho Brownfields

A website detailing the current projects managed by Idaho's Brownfields Revolving Loan Fund and the process by which organizations can apply for financial support.

www.idahobrownfields.com

ATSDR Health Assessment Process

A website describing ATSDR's public health assessments. ATSDR evaluates community exposures to hazardous substances. Concerned community members can contact ATSDR to petition for a public health assessment. The Idaho Department of Health and Welfare worked under a cooperative agreement with ATSDR and evaluated the conditions and potential health risks at the Immanuel Church brownfields site.

www.atsdr.cdc.gov/COM/petition.html

Idaho Department of Health and Welfare—Environmental Health Section

A website providing environmental health information for Idaho residents. The Idaho Department of Health and Welfare Bureau of Community & Environmental Health conducts site assessments and environmental education for communities through its environmental health section. As the state counterpart to ATSDR, the bureau's environmental health section works with IDEQ and EPA to tackle many of the hazardous waste sites in Idaho.

<http://healthandwelfare.idaho.gov/Health/EnvironmentalHealth/tabid/95/Default.aspx>



Yukon River Inter-Tribal Watershed Council, Alaska and Yukon

Pioneering Partnership Breaks the Mold without Breaking the Bank

Faced with the contamination of the historically pristine Yukon watershed, a motivated group of tribes formed a groundbreaking partnership to tackle a common problem. A truly grassroots coalition tied together scattered communities over an immense rural area for a singular mission: to protect the health of their river and themselves.

Background

The Yukon River has served as the “lifeblood” for the native people of Alaska and the Yukon. The river has been a source of both fresh water and regular food supply. The harsh environment and rugged terrain make the Yukon an important corridor for travel in central Alaska. The Yukon River, however, a lifeline to the area and long romanticized for its scenic views and undisturbed wilderness, has suffered at the hands of unchecked development and environmental irresponsibility.

Greater industrial activity and higher population were accompanied by neglected solid waste dumps, run-down military facilities, and chemical contamination. The natural resource industry and the byproducts of a strong military presence left their scars on local ecosystems. By the late 1990s, the water quality in the Yukon River had fallen to undrinkable levels. Fish populations suffered, as did residents’ quality of life. Dozens of tribal governments within the Yukon watershed, which previously had worked independently, decided to join forces and take action as a team.





Photo: Alakanuk Dump.pdf (published by YRITWC)

Alakanuk Former Dump Site, on the banks of the Yukon.

“In rural Alaska, environmental health and physical health are interlinked [. . .] We provide exposure pathway education. People intuitively know it but don’t intuitively think about how dangerous it might be.”

—Rose Hewitt
Program Manager for the
YRITWC’s Brownfield Tribal
Response Program

More than Just Land

While the Yukon River vista might make a great snapshot for visitors, for the many tribes in the Yukon delta, it represents far more than just a scenic view. Generations of people have held the river as sacred. For thousands of years, people have lived off both the land and the water. The river provides food, water, and mobility—all the essentials for maintaining a healthy lifestyle. Although the conveniences of the 21st century have reduced people’s dependence on the river for these necessities, the inhabitants of the Yukon region still have an important connection to the water. The river plays an important role in sustaining local economies. Cottage industries rely on the river, not only for fishing, but in some cases for providing transportation or recreation. While for most, the river may no longer be the source for survival, it still provides the means for survival. Once only a spiritual responsibility, protection of the river has now become an economic one as well.

A Coalition—The Watershed Moment for the Watershed

The tribes of the watershed long endured a similar harsh arctic climate

on the banks of the Yukon River, but in some cases that is all they had in common. Combined efforts and intertribal cooperation were not part of many tribes’ histories. Moreover, the Yukon River watershed encompasses an enormous geographical area, of which large parts are difficult to access for many months each year. With both the past and present acting as major obstacles, coordinating grassroots efforts becomes all the more challenging.

The need to face a common problem with a united front, however, trumped both historical precedents and logistical obstacles. Dozens of tribes and first nations situated within the borders of the United States and Canada came together to form the Yukon River Inter-Tribal Watershed Council (YRITWC). Elders from the founding tribes and first nations met in the spring of 1997 to pen the major accord that would define the future Council’s goals. Beyond the simple creation of the YRITWC, the accord critically cited the kinds of environmental health problems that the watershed has experienced: wildlife health impacts, observed pollution, and increased cancer rates in local populations. In addition,

the accord rightly emphasized the central role that the indigenous people of the watershed play in its environmental and public health. Even with the historical value aside, indigenous communities can play a large role in influencing water quality because a significant portion of the watershed is designated as tribal land.

The accord set the ground rules for making decisions that impact the communities. The board of directors and its 12-member executive committee manage the structure of the YRITWC. Mindful of the central role that cooperation plays, the Council built in several measures to ensure that individual members did not feel slighted. Board members must be chosen by consensus. The members must be evenly distributed among various regions in the watershed. Finally, the Council operates through consensus-based decisions, meaning everyone must agree in order for definitive action to be taken. And while day-to-day activities occur with some autonomy, the biennial summit meetings bring community members from all across the watershed together to refine or redirect the Council's focus. Relying on consensus-based decisions might seem impossible for some grassroots organizations, but the YRITWC recognizes the need for activities on a broad scale. For each and every community to influence the health of the watershed, the Council's activity must involve as many communities as possible.

From Preparation to Cooperation

The 1997 accord set the scope of the YRITWC's activities and its focus on restoring a healthy landscape, but it still lacked direction for how, exactly, the Council was going to tackle those health problems. While recognizing common issues and concerns helped the group coalesce, there was little guidance for how the problems should be resolved. Thus, two short years later, in 1999, the

fledgling Council came together again to try to refine its purpose. That spring, the Council made a 50-year commitment. By the year 2049, it aimed to restore the Yukon River as a safe and drinkable water source. In 2004, another summit meeting expanded on details for the strategic plan. At the meeting, Council members developed four main areas of focus, with concrete activities that furthered those goals. This blueprint for how the Council can address its mission still guides the group's activities today.

Garnering Support, Building Competence

Developing a grassroots effort across a piece of land larger than most U.S. states is difficult, to say the least. The Yukon River watershed covers an enormous area, with dispersed communities that are largely inaccessible for several months each winter. Garnering support across such a large area takes more than just mailings or telephone calls—it takes face-to-face interaction. The biennial summit meetings, which function as a general body meeting for all tribes involved, help the YRITWC keep its cohesion.

To keep the momentum going, a major element of the YRITWC's activity is an educational effort to ensure no worsening of contamination in the watershed. Aside from the actual site assessment or restoration, the Council organizes community education meetings designed to equip citizens with the knowledge and awareness to make the most environmentally sound decisions. The kinds of advice the Council provides varies from how to manage resources to how to properly dispose of your truck's oil. Education about exposure pathways has been a particular focus by the YRITWC. The population is not always aware of how certain activities might be harmful or dangerous to people's health. So while education might not resolve the existing problems in the watershed, effective communication with local

YRITWC 50-Year Vision Statement

"To Be Able to Drink Water Directly from the Yukon River."
(1999)

We, the Indigenous Tribes/First Nations from the headwaters to the mouth of the Yukon River, having been placed here by our Creator, do hereby agree to initiate and continue the clean up and preservation of the Yukon River for the protection of our own and future generations of our Tribes/First Nations and for the continuation of our traditional Native way of life.

—The YRITWC's
Mission Statement,
written in 1997

The Strategic Plan delineates four main areas of focus (prepared in 2004) for the Council:

Understanding: Developing a baseline understanding of the watershed is critical to its revitalization. Such investigation enables the Council to more effectively track progress, direct efforts, and supply the right advice to communities.

Education: Teaching local communities about responsible river management empowers them to effect changes on smaller scales and minimize environmental carelessness.

Preservation, Restoration, and Stewardship: Focusing on the problem sites within the watershed, this goal promotes resolving the most serious issues facing the region through direct action and supportive strategies.

Capacity Building: Strengthening the YRITWC and supporting local indigenous authorities to carry out the Council's mission without direct involvement. Enabling local decision-making that relies on sound and informed principles.

populations can prevent many problems from getting worse. The workshops and education, for adults and youths, have not only helped raise public awareness about healthy environmental practices, but have also played a role in identifying potential sites to add to the inventory. When concerned citizens learn that there are recourses for cleaning up abandoned and derelict sites, they are more inclined to pursue those avenues.

From Organization to Action

To catalog and address the most hazardous sites in the watershed, the YRITWC began a Tribal Response Program in 2005, funded through an EPA grant program by the same name. Now part of the Sustainable Lands Department created in 2007, the program exclusively targets tribal lands in need of remediation. The YRITWC's Tribal Response Program is the principal force behind site assessment and remediation within the watershed.



Source: Yukon River Inter-Tribal Watershed Council

Each year, the Brownfield Tribal Response Program evaluates sites for inclusion in its brownfields site inventory. In addition, every spring the program accepts applications from the tribal communities that have brownfields listed in the inventory, to receive a site assessment conducted by an environmental professional under contract with YRITWC. In the past 4 years, YRITWC has conducted five Phase I Environmental Site Assessments (ESAs), two Phase I/Limited Phase II ESAs, and one Phase II ESA.

Following publication of site assessment reports, Brownfield Tribal Response Program staff members write action plans for each site. These comprehensive documents describe the problem and potential solutions for the individual tribe to pursue. A well-designed plan for site reuse is a key criterion for receiving brownfield funding from state or federal sources. (Note that Alaska Tribes can't apply directly for EPA Revolving Loan, Cleanup, or Job Training Brownfield grants.) By providing the beginning legwork, the Council eases the pressure on small tribes who might not have the staff or resources to produce a comprehensive plan.

Program staff members work with people on location to determine which sites present the most severe health risks. By communicating with a point person working for that specific tribe, the YRITWC helps make these local communities aware of their options for assessment and remediation. The close relationship that the Brownfield Tribal Response Program has with local tribe representatives should not be understated. In certain cases, staff will even meet directly with an individual tribe's council or elders to discuss the future of a site. This interaction ensures not only that the action plan resolves the health hazards, but that effective reuse of the site yields meaningful health benefits for the community.

What Do the Action Plans Cover?

Concise overview of topics such as:

- Initial site assessment findings (“Phase I” and limited “Phase II” environmental site assessment)
- Recommendations for:
 - » Immediate cleanup
 - » Additional sampling
 - » Evaluating contamination sources
- Roadmap for what the community can do:
 - » Considering site controls
 - » Establishing strategic partnerships
 - » Identifying assets and needs
 - » Assessing and strengthening redevelopment and reuse plans
- Possible funding opportunities
- Other resources

These carefully constructed action plans provide guidance tailored to that site, but come with no strings attached or guarantee for future funds. Tribal governments must come up with their own funding mechanisms for site cleanup and reuse, but fortunately they are not alone. While the YRITWC stays clear of any more field work, its assistance is far from over. Staff members remain in regular communication with tribal officials to continue the process. Since the YRITWC does not conduct remediation itself, it acts instead as a resource for the tribes by providing information on where to find external grant opportunities. Follow-up with local tribes is critical to the process, ensuring that communities have taken action on the items identified by the YRITWC in the action plan. The YRITWC understands the pull that each tribal government has. Even if a site is not selected for an action plan, staff assists the tribe officials in finding alternatives through state-based or EPA programs, or even through the YRITWC Backhaul Program, which has removed millions of pounds of lead-acid batteries, old vehicles, white goods (i.e., large household appliances), electronic waste, and other hazardous waste from watershed communities.

“Implementing this Action Plan will require a certain degree of commitment from the Holy Cross community and other stakeholders. Often the most successful brownfield projects are those that have the support of local people and entities who are willing to carry out the goals and objectives of the project. Taking action to address the various environmental concerns associated with the Ghost Creek Abandoned Drums site could result in many community benefits.”

—Ghost Creek Abandoned Drums Action Plan Conclusion

To date, the young Tribal Response Program averages between two and five assessments and accompanying action plans each year, depending on the scale, severity, and accessibility of applicant sites. Although the program has not seen a fully remediated site as of 2009, the program has worked with 40 tribes to add over 230 sites to its brownfields inventory. Progress might be slow-going

in these nascent stages, but the grassroots dedication and committed cooperation indicate healthier days ahead.

Lessons Learned

- **Preventive care helps brownfields too:** Just as preventive medicine can help stave off illness, the right kind of intervention and awareness education can prevent environmental problems from getting worse. This type of outreach, which empowers local communities, can help ease the burden on umbrella groups like the YRITWC and can make grassroots efforts snowball into larger regional movements.
- **Don't let the scope frighten you:** Focusing on the largest watershed in the largest U.S. state, the YRITWC faced the daunting task of coordinating efforts across a huge area. Through good communication and consensus-based decision-making, and by getting local leadership on board, the YRITWC has developed into a thriving organization with important impacts in just over a decade.

Health Impacts of the Yukon Watershed Redevelopment

- Established intertribal cooperation leading to a 50-year vision to restore the Yukon River as a drinkable water source.
- Conducted community education to prevent further watershed contamination.
- Developed an extensive brownfields inventory for future remediation.



Resources for More Information

Yukon River Inter-Tribal Watershed Council (YRITWC)

A website that provides a history and description of YRITWC activities. The website includes media files (pictures and videos) that provide further insight on the progress and successes of the groundbreaking partnership.

www.yritwc.org

EPA's State and Tribal Response Programs

A website that explains EPA's provision of funds to support full-time staff and multiyear programs that tackle the assessment and remediation efforts specifically on tribal lands. If your tribal community has a brownfield candidate site, consider applying for these federal funds.

www.epa.gov/brownfields/state_tribal/index.html

Resources

This section lists a wide range of resources that might assist members of the development community in identifying funding sources, assessment tools, databases, best practices, and other sources of information to assist in their land redevelopment or revitalization efforts. The list is not exhaustive, but represents a cross-section of governmental and organizational resources that might support and enhance various redevelopment and land reuse activities. Listing of references and links here does not constitute endorsement or recommendation by ATSDR.

Grant and Funding Opportunities

Resource	Website	Description
Center for Creative Land Recycling (CCLR)	www.cclr.org/programs/loans	CCLR is a nonprofit organization that focuses on facilitating ways to recycle lands so that urban sprawl is discouraged, urban areas are redeveloped, and greenspace is preserved. CCLR's CALReUSE Grant and Loan Funds offer financing to community brownfield developers to aid in assessing and remediating contaminated lands.
Department of Health and Human Services (DHHS), Office of Community Services (OCS)	www.acf.hhs.gov/programs/ocs/	OCS works in partnership with states, communities, and other agencies to address the economic and social needs of the urban and rural poor at the local level by providing grant monies and technical assistance to these organizations. The goal is to increase the capacity of individuals and families to become self-sufficient and to revitalize communities. Provides grants to community development corporations and community action agencies for brownfields redevelopment and job creation projects.
Economic Development Administration (EDA)	Summary of EDA's Role in Brownfields: http://www.eda.gov/PDF/meyer.pdf Investment Programs: http://www.eda.gov/AboutEDA/Programs.xml Notice of Funding Availability: http://www.eda.gov/Investments-Grants/Nofa.xml	EDA is a partner with EPA for redeveloping brownfields. While EPA addresses the environmental impacts on these contaminated lands, EDA uses strategic grant investments to promote market-driven reuse of brownfields properties.
National Association of Counties (NACo)	www.naco.org/	NACo offers resources for counties, including a grants clearinghouse, so that counties can access information on available grants from federal, private, and foundation entities.
Northeast-Midwest Institute: Brownfields Incentives and Financing	http://www.nemw.org/	The Institute's website provides resources and best practices in the area of federal, state, and local brownfields incentives and financing, as well as links to publications, case studies, webcasts, and other information related to brownfield sites nationwide.

Grant and Funding Opportunities

Resource	Website	Description
Real Estate Investment Trusts (REITs)	http://www.reit.com/	An REIT is basically a mutual fund that specializes in collective real estate investments. An REIT could be used to purchase, evaluate, remediate, redevelop, and sell brownfields sites.
State-Specific Funding Opportunities	Various	Most states have brownfields programs or funding allotted to land revitalizations and redevelopment. Search the Internet or call your local health officials to help identify local resources.
State and Tribal Response Programs Publications	http://www.epa.gov/brownfields/state_tribal/pubs.htm	EPA reports outline various financial tools and incentives that state and tribal governments provide to revitalize brownfield sites.
Urban Land Institute (ULI)	http://www.uli.org/sitecore/content/ULI2Home/CommunityBuilding/CommunityActionGrants.aspx	ULI offers a Community Action Grant that promotes entrepreneurial projects at the regional, state, and local levels to foster community collaboration for change and action (e.g., projects related to smart growth, sustainability, or revitalization).
U.S. Department of Agriculture (USDA)	www.da.usda.gov/hmmd/brownfields.htm	USDA is a partner in EPA's national brownfields program. This federal agency has seven mission areas, two of which ("rural development" and "natural resources and environment") are focused on helping communities redevelop brownfields.
U.S. Department of Housing and Urban Development (HUD): Brownfields Economic Development Initiative (BEDI)	http://www.hud.gov/offices/cpd/economicdevelopment/programs/bedi/	BEDI provides public entities with funding to redevelop environmentally contaminated abandoned and underused lands such that economic revitalization will occur. HUD requires that BEDI grant recipients use this funding together with a new Section 108 loan.
U.S. Department of Housing and Urban Development (HUD): Economic Development Initiative (EDI)	http://www.hud.gov/offices/cpd/economicdevelopment/programs/edi/index.cfm	HUD offers grant funding to local governments through EDI, but this funding can only be used in conjunction with projects being aided by Section 108 funding.
U.S. Department of Housing and Urban Development (HUD): Section 108 Loan Funding	www.hud.gov/offices/cpd/communitydevelopment/programs/108/index.cfm	HUD offers Section 108 loan funding to public entities for redevelopment projects as part of its Community Development Block Grant (CDBG) program.
U.S. Environmental Protection Agency (EPA): Brownfields Funding Information	Description of all available EPA funding: http://www.epa.gov/brownfields/pilot_grants.htm Applications: http://www.epa.gov/brownfields/applicat.htm	This site provides information on applying for various types of EPA brownfields funding grants and other funding opportunities.
U.S. Environmental Protection Agency (EPA): Clean Water State Revolving Fund Branch	http://water.epa.gov/grants_funding/cwf/cwsrf_index.cfm	This site provides information on obtaining funding for brownfields work through EPA's Clean Water State Revolving Fund Branch.

Tools

Resource	Website	Description
ATSDR Brownfields/Land Reuse Site Tool	www.atsdr.cdc.gov/sites/brownfields	A rapid site assessment and multiple chemical exposure dose calculating tool that allows users to assess sites by past/future use, institutional controls, sensitive populations, and suspected or confirmed contamination.
ATSDR Action Model	www.atsdr.cdc.gov/sites/brownfields	ATSDR's Brownfields/Land Reuse Action Model helps diverse members of the development community in identifying common goals and incorporating these goals in strategic planning. The model consists of four steps that ask key questions to assist in planning, and encourages people to think about broad public health topics connected to community health.
Brownfields Center at the Environmental Law Institute	www.brownfieldscenter.org/big/searchdatabase.cfm	This online database allows users to search for agencies, organizations, groups, and others working on brownfields issues in individual states nationwide. This search engine provides users with the option of identifying organizations by type or location (i.e., nationwide, state, or region).
The Healthy Development Measurement Tool (HDMT)	www.thehdmt.org/	An evaluation metric that incorporates public health needs into urban development plans and projects. The principle behind the tool is that health resources should be equally available to all communities. The HDMT explicitly connects public health to urban development planning in efforts to achieve a higher quality social and physical environment that advances health. The tool evolved from the Eastern Neighborhoods Community Health Impact Assessment (ENCHIA), a multistakeholder assessment process convened and facilitated by the Program on Health, Equity, and Sustainability at the San Francisco Department of Public Health.
Leadership in Energy and Environmental Design for Neighborhood Development (LEED-ND) Rating System	www.cnu.org/sites/files/RatingSystem-Clean.pdf	The U.S. Green Building Council (USGBC), the Natural Resources Defense Council (NRDC), and the Congress for the New Urbanism (CNU) developed LEED-ND, a system for local governments, development teams, and planners to rate and certify green neighborhoods. This represents the first nationwide neighborhood design rating system, incorporating standards of green building, urbanism, and smart growth.
Protocol for Assessing Community Excellence in Environmental Health (PACE EH)	http://www.cdc.gov/nceh/ehs/ceha/	NACCHO and CDC's National Center for Environmental Health collaborated to develop the PACE EH methodology, which provides guidance for local health officials and communities worldwide in performing community environmental health assessments. The tool was designed to strengthen public involvement in environmental health decision-making to help ensure that the interests of the community are taken into account during the process.
Sustainable Management Approaches and Revitalization Tools—electronic (SMARTe)	www.smarte.org/smarte/home/index.xml?jsessionid=2cxge7ehb7o7b	SMARTe is a free web-based tool that enables users to make decisions about the best ways to redevelop lands. SMARTe was developed by EPA, the U.S.-German Bilateral Working Group, and the Interstate Technology Regulatory Council Brownfields Team to provide a tool that would enable brownfields stakeholders to analyze various aspects of redevelopment options specific to their projects, such as market costs, financing options, environmental risks, and state-specific information.

Other Sources of Information

Resource	Website	Description
ATSDR Public Health Assessment Guidance	www.atsdr.cdc.gov/HAC/PHAMannual/index.html	This guidance describes ATSDR’s public health assessment process and resources, which could be applied during the assessment phases of redevelopment and revitalization projects. A community member can learn how to request or “petition” a public health assessment at: www.atsdr.cdc.gov/HAC/petition.html
ATSDR On-line Learning Course: Public Health Assessment Overview	www.atsdr.cdc.gov/training/pha_professional1/ www.atsdr.cdc.gov/training/pha_professional2/ http://www.atsdr.cdc.gov/training/pha_professional3/	Part 1: Explains ATSDR’s role in the public health assessment process and how affected community members can become constructively involved. Part 2: Describes how to assess exposures and evaluate potential public health hazards. Part 3: Details how ATSDR makes its public health conclusions, recommendations, and action plans.
American Planning Association (APA)	Brownfields: www.planning.org/research/brownfields/ Resource List: www.planning.org/research/brownfields/resources.htm	Under an EPA grant, APA is developing Community-Based Brownfields Redevelopment Strategies to assist low-income communities with redevelopment opportunities for brownfield sites. When completed, APA will have a workbook and training program that can assist community development corporations and planners nationwide to revitalize these communities. This site also contains an extensive list of documents to guide and provide information on brownfields projects.
ASTM International	www.astm.org/Standards/E1984.htm	ASTM International has published the Standard Guide for Process of Sustainable Brownfields Redevelopment to explain the process involved with redeveloping brownfields properties for any stakeholder.
Brownfields and Land Revitalization Technology Support Center (BTSC)	www.brownfieldstsc.org/	BTSC assists decision-makers in various aspects involved with cleaning up contaminated sites.
Environmental Law Institute: Guidebook for Brownfield Property Owners	www.elistore.org/reports_detail.asp?ID=459	This free online report discusses the process, issues, and benefits of brownfields redevelopment for property owners.
Florida Brownfields Association	http://www.floridabrownfields.org/displaycommon.cfm?an=1&subarticlenbr=15	The Florida Brownfields Association developed Brownfields 101 to answer questions that people might have about establishing a brownfields program.
Institute of Brownfield Professionals	www.brownfieldpros.org/index.cfm/ac/NewsDetails/ID/194	This institute provides a series of Practice Guides for Brownfields Redevelopment prepared by the Center for Environmental Policy and Management at the University of Louisville. These guides offer advice on redeveloping brownfields for regional and urban planners and policymakers.
National Association of County & City Health Officials (NACCHO)	www.naccho.org/pubs/product1.cfm?Product_ID=42	NACCHO has published Community Revitalization and Public Health—Issues, Roles, and Relationships for Local Public Health Agencies, a collection of articles and resources that offers guidance from a public health perspective for anyone involved in redevelopment, community revitalization, or brownfields.

Other Sources of Information

Resource	Website	Description
National Association of Local Government Environmental Professionals (NALGEP)	www.nalgep.org/	NALGEP, a not-for-profit organization developed to help local governments handle environmental issues, coordinates the Brownfield Communities Network—a network of local communities demonstrating that remediation and redevelopment of environmentally contaminated land can effectively revitalize communities nationwide. NALGEP’s website provides information on smart growth, local innovation, and other helpful resources, including Revitalizing Southeastern Communities, a toolkit highlighting over 60 case studies of successful brownfields projects.
National Environmental Health Association (NEHA)	www.neha.org	The National Environmental Health Association (NEHA) is a society for environmental health professionals. This site offers case studies on land use planning and design projects with which NEHA has been involved, that specifically integrate environmental health.
National Governors Association (NGA) Center for Best Practices	www.nga.org/portal/site/nga/menuitem.1f41d49be2d3d33eacdcbbeb501010a0/?vgnnextoid=ffdf58fb74ee1010VgnVCM1000001a01010aRCRD	This site highlights innovative practices by states at brownfields, and other redevelopment and land reuse sites.
National Oceanic and Atmospheric Association (NOAA): Portfields	http://response.restoration.noaa.gov/topic_subtopic_entry.php?RECORD_KEY%28entry_subtopic_topic%29=entry_id,subtopic_id,topic_id&entry_id(entry_subtopic_topic)=725&subtopic_id(entry_subtopic_topic)=16&topic_id(entry_subtopic_topic)=3	NOAA is a leader of a federal interagency effort known as Portfields, which redevelops brownfields located in harbor and port areas, with a particular focus on developing port facilities that are environmentally sound.
U.S. Conference of Mayors (USCM)	http://preview.usmayors.org/brownfields/survey.asp	The U.S. Conference of Mayors has conducted brownfield surveys across the nation for a decade. It has released seven status reports on brownfield sites across the United States, with the latest titled <i>Recycling America’s Land: A National Report on Brownfields Redevelopment, Volume VII</i> .
U.S. Environmental Protection Agency’s (EPA’s) Brownfields Page	www.epa.gov/brownfields/	This site is EPA’s main brownfields page. It provides quick links to several helpful information resources, such as funding guidance, success stories, state programs, and brownfields law.
U.S. Environmental Protection Agency (EPA): State Brownfields and Voluntary Response Programs—An Update from the States	www.epa.gov/brownfields/pubs/st_res_prog_report.htm	This 2008 report provides a concise, user-friendly synopsis of the programs and tools that are available through state programs. It offers contact information and material on each state’s response program.
U.S. Green Building Council (USGBC)	www.usgbc.org/DisplayPage.aspx?CMSPageID=124	USGBC is a nonprofit entity that developed a system for rating green buildings called Leadership in Energy and Environmental Design (LEED).





For more information please contact

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Telephone: 1-800-CDC-INFO (232-4636) / TTY: 1-888-232-6348

Web: www.atsdr.cdc.gov/sites/brownfields/index.html

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