Milwaukee’s Menomonee Valley: A Sustainable Re-Industrialization Best Practice

By Christopher De Sousa

SITE HISTORY

The Menomonee River Valley lies in the heart of the city of Milwaukee and has always played a pivotal role in the economic life of the region. The Valley spans almost one kilometer north to south and five kilometers east to west, with an area of over 1,200 acres (map). Flowing through it is the Menomonee River, whose abundant natural resources once sustained Native American populations. The Valley’s accessibility to railways, Lake Michigan, and local river systems made it a prime location for industrial activity in the 1800s. In 1869, a group of business leaders supported by local authorities planned a network of canals and slips in the Valley that were surrounded by parcels of land for industrial use. The project took a decade to complete and required vast quantities of material to fill in the marsh, including dredge spoil, gravel, and municipal and industrial wastes. Larger industrial complexes, including tanneries, breweries, stockyards, and railroad shops, dotted the entire Valley by the late 1800s. The transformation of the Valley from a natural system to an industrialized one is the feature that has most epitomized Milwaukee’s evolution and, unfortunately, highlights the unsustainable model of past industrialization efforts.

By the end of the nineteenth century, dense residential communities were spread along the Valley’s bluffs. Industry prospered well into the 1920s, and only the Great Depression of the 1930s could curtail its growth, which quickly picked up again during World War II. The industrial engine of the Valley began to decelerate, however, in the decades following the war. Highway construction made it possible for people to live further away from their workplace and for manufacturers to use roads instead of rail and water to transport goods. Although the opening of Milwaukee County Stadium in 1953 and the Valley Power Plant in 1969 did breathe some life into the district, it was still suffering the same fate as many industrial areas in the Rustbelt.

1 Methodological note: Information for this case study was obtained from available project reports, from conversations with the project coordinators, and from extensive personal involvement in the Menomonee Valley Benchmarking Initiative. The project is ongoing, and the information here is current up until June 2011. For any questions, please contact Christopher De Sousa, School of Urban and Regional Planning, Ryerson University, chris.desousa@ryerson.ca. Research assistance provided by Jason Tildetzke and Kevin Duffy, University of Wisconsin-Milwaukee.


Indeed, the Valley witnessed employment drop from over 50,000 jobs in the 1920s, to approximately 20,000 jobs in the mid-1970s, to barely 7,095 jobs by 1997.\textsuperscript{4,5} With its economic decline, a host of problems ensued in both the Valley and its surrounding neighborhoods, including unemployment, a reduced tax base, and pollution.

**PROJECT VISION**

The vision for the Menomonee Valley evolved over time in a coordinated manner, with many studies and collaborative initiatives employed to address historic perceptions and flesh out future directions. While the City of Milwaukee made a few minor efforts to revitalize the Valley in the late 1970s (i.e., rebuilding several roads, clearing blight, acquiring land, and locating a handful of city facilities in the area), more attention was devoted to its renewal when Mayor John Norquist took office in 1988.\textsuperscript{6} While several longstanding manufacturers continued to operate in the Valley, there also emerged a new desire for amenities to reconnect it with the surrounding community. Amenities contemplated, planned, or added in the early 1990s included Marquette University’s Valley Fields athletic complex, the Potawatomi Bingo and Casino, a new stadium for the Milwaukee Brewers, and the Hank Aaron State Greenway Trail. These projects, along with the rapid conversion of warehouse and industrial property into residential lofts and retail shops in the Historic Third Ward just east of the Valley, made it necessary for the city and affected stakeholders to come to a decision on the future of this industrial district. Fortunately, Milwaukee’s Department of City Development, local businesses, and key stakeholders in the surrounding community did come to a general agreement that the area needed to be revitalized to provide “family supporting” jobs.

The City of Milwaukee coordinated and prepared a plan for the Valley entitled “Market Study, Engineering, and Land Use Plan for the Menomonee Valley”\textsuperscript{7} in 1998 that was a vital step in the evolution of the project’s vision. An important component of this plan was a preliminary analysis of the state of the Valley as it related to stakeholder desires, real estate market conditions, engineering infrastructure, and environmental pollution. Public outreach and stakeholder participation efforts including workshops, interviews and surveys revealed that many wished to see industry remain and expand in the Valley. Manufacturers, however, were concerned about whether the haphazard mixing of entertainment and other uses would affect its long-term viability for heavy manufacturing. Market research revealed the importance of existing manufacturing employment to the area and highlighted the important attributes for manufacturers offered by the Valley, namely its central location, access to freeways, proximity to downtown, and access to labor. The successful office conversion of a large tannery complex in the eastern end of Valley also pointed to the potential for growth in that sector and raised the possibility that office uses might act as a buffer against escalating residential and retail encroachment from the east. While the plan found that additional recreational space was not required to serve local residents, there was support for passive green space to enhance the image of the district and to serve as functional infrastructure for flood protection, biking, and walking. Research and public outreach also revealed that there was little appetite for retail activity in the Valley given that it would compete with struggling retail in surrounding neighborhoods and emerging retail in the Historic Third Ward.

An engineering analysis prepared for the city’s plan revealed that access to rail and water was an asset, but that access...
and circulation for vehicles, transit, and pedestrians needed significant improvement. As for environmental conditions, very little comprehensive information about soil and groundwater contamination could be pulled together for the plan, but the information that did exist pointed to a high likelihood of brownfield problems resulting from over a century of heavy manufacturing and land filling throughout the area.

In all, the plan recommended that the Valley be upgraded and revitalized to retain and strengthen viable and existing industries, attract new industry to the western and central areas of the Valley, promote “compatible” mixed-use development, largely in the eastern Valley, and maintain and protect adjacent neighborhoods and business areas. On the basis of preliminary research and consultation, the plan recommended several implementation agenda action items to move the project forward:\(^8\)

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<td>1</td>
<td>A public/private partnership should be formed to implement the Land Use Plan.</td>
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<td>The City of Milwaukee zoning ordinance should be amended to facilitate implementation of the Land Use Plan.</td>
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<td>Environmental and soil analyses should be undertaken at all sites suitable for redevelopment in the priority areas.</td>
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<td>Financing for environmental remediation and site improvements should be made available.</td>
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<td>A Partnership and other official representatives of the city should take the leadership role in promoting redevelopment within the Valley.</td>
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<td>Land uses that degrade the environment or impede redevelopment should be eliminated.</td>
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<td>7</td>
<td>Roadway reconstruction projects to support redevelopment in the Valley should be undertaken.</td>
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<td>8</td>
<td>The appearance of the Menomonee Valley should be enhanced through the creation of green space and other visual amenities.</td>
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Although the city produced the plan in consultation with many stakeholders, its initial action item was to formalize the emerging public/private partnership by establishing the Menomonee Valley Partners (MVP) in November 1999. Supported initially with funds from a U.S. EPA Brownfields Redevelopment Pilot Grant ($200,000) received by the city in 1998, the MVP became a 501(c)(3) nonprofit organization that would act as a public-private partnership to facilitate business, neighborhood, and public partners in efforts to revitalize the Valley. MVP hired its first staff person in 2000 and grew gradually to 2.5 staff in 2003, 3.5 staff in 2006, to its current number of 4 full-time staff.

Since its inception, MVP has been advised by a board of directors of over 20 stakeholders committed to and affected by

\(^{8}\) City of Milwaukee, Land Use Plan, 6-3 - 6-11.
the Valley’s future. Through this partnership approach, stakeholders are essentially required to work together to develop and implement the action agenda items in a manner that respects the interests of the different members. At the same time, the individual members indirectly commit to ensuring that their own activities contribute to moving the vision of the partnership forward. It is important to note that while the MVP was a new entity, members of the MVP board represented long-standing and respected businesses, nonprofits, and civic organizations that had been operating in the local community well before the 1990s. This structure also helped formalize the role of stakeholders in the partnership, balance power among participants, and enhance the credibility of individual members.

Other key stakeholder groups that played pivotal roles in developing and implementing the Valley vision include:

- **Public partners - the City of Milwaukee’s Department of City Development and Department of Public Works, the Wisconsin Department of Natural Resources, and the Wisconsin Department of Transportation**
- **Business partners Menomonee Valley Business Improvement District (BID#26, established in 1999)**
- **The Sixteenth Street Community Health Center, a local nonprofit operating in the neighborhood south of the Valley since the late 1960s and led the charge for a vision that incorporated sustainability principles**

Incorporating sustainability into the visioning process was also an important matter to stakeholders. In 1999, the U.S. EPA awarded a $250,000 grant to the Sixteenth Street Community Health Center through its Sustainable Development Challenge Grant program to look into ways of incorporating sustainability into the Valley’s redevelopment. Sixteenth Street and PDI, a private consulting group then under the management of a professor from UW-Milwaukee’s School of Architecture and Urban Planning, organized a two-day charrette in which design professionals, nonprofits, government agencies, local universities, students, and community members were charged with the task of “raising the bar on redevelopment and restoration activities for Milwaukee’s Menomonee River Valley.” The goal was to forge a strategy that could attract high quality investors and family-supporting jobs to the Valley, restore property value to the tax rolls, and re-establish a sense of pride in the community among Milwaukeeans while reducing environmental impacts.

Seven so-called “Keys for Sustainability” were put forward to guide the charrette and link it to the city’s Land Use Plan and to the infrastructure activities being planned for the Valley. These included: (i) transportation and circulation, access and linkage, responsive to infrastructure plans; (ii) mixed use and density; (iii) bundling utilities in a single corridor; (iv) cost-effective environmental remediation and engineered solutions based on site conditions and uses; (v) green building; (vi) open space and habitat restoration; and (vii) using the river as an amenity. The charrette resulted in the production of a comprehensive report entitled **Vision for Smart Growth** that outlines ideas for the eastern, central, and western portions of the Valley. The exciting plans and designs addressed each of the Keys for Sustainability and provided an inspiring description of “what could be,” which brought further attention to the Valley’s assets and potential. The report also confirmed that a broader sustainably-oriented approach was both viable and attractive.

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PROJECT CHARACTERISTICS AND DEVELOPMENT

The account of the Valley’s redevelopment is described below in a spatial manner, focusing first on Valley-wide considerations, then sub-regions (west, east, south), followed by a description of some specific projects. It should be noted that many of these initiatives occurred simultaneously (see project timeline).

Valley-Wide Considerations

Early on, those involved in the Valley’s redevelopment knew that it was necessary to address two primary issues, the negative stigma associated with what had become the state’s most notorious brownfield and the Valley’s poor accessibility. To provide information on environmental and soil conditions, the MVP, City of Milwaukee, Wisconsin Department of Natural Resources, U.S. EPA, and the U.S. Geologic Survey conducted scientific investigations of the Valley’s soil and groundwater. Of particular concern were initial indications that groundwater flow might be moving between parcels, which meant that contamination could be spreading and that the cleanup of one property might not improve groundwater conditions adequately. The City of Milwaukee used funds from the EPA Brownfields Redevelopment Pilot Grant to also conduct an environmental site assessment using an “area-wide” approach. The study was divided into two parts: a physical characterization of the groundwater (location, flow, etc.) and a chemical sampling to determine the nature of area-wide contamination. Modeling for the physical characterization revealed that the two major receptors for shallow groundwater were Milwaukee’s Deep Tunnel System and Lake Michigan. Fortunately, however, the travel time to these receptors was very slow and would allow for the natural attenuation of many dissolved contaminants.

To complete the physical characterization and begin chemical sampling, the City of Milwaukee received an additional $150,000 from the EPA. Sampling revealed that groundwater impacts greater than background or DNR regulatory standards were not present on a Valley-wide basis, and that groundwater quality at any point in the Valley was reflective of its relative location. Thus, sites with no soil contamination were unlikely to find groundwater contamination. Furthermore, subsurface conditions were found to be conducive to biodegradation, making natural attenuation a viable remedial option for groundwater contamination related to specific properties. Overall, the study concluded that there was minimal risk from existing groundwater contamination, which alleviated many area-wide concerns. While individual properties may have had site-specific concerns, their respective landowners and purchasers could manage them individually without fear of re-contamination by adjacent parcels.

11 C. P. Dunning.
Sub-Regional Considerations

Several major projects were initiated in the early 1990s to improve access and mobility within the Menomonee Valley, including the Hank Aaron State Trail, Miller Park, the Sixth Street Viaduct, and Canal Street. While the individual projects are each important, more significant was the fact that the group of projects brought the attention and resources of various stakeholders and government agencies to the Valley. In 1991, the Wisconsin State Legislature directed the Department of Natural Resources (DNR) to study the feasibility of establishing a Henry Aaron State Park on the Menomonee River adjacent to Milwaukee County Stadium. More comprehensive planning for a greenway trail to connect the Valley from west to east was initiated in 1992, with the DNR taking the lead in planning, constructing and managing the trail. Other partners included the City of Milwaukee (involved primarily in raising funds, releasing land, and maintaining the trail), various federal agencies (financial support), local community groups and neighborhood associations (e.g., Friends of the Hank Aaron State Trail have helped to raise awareness and funds), and private landowners (e.g., Miller Park Stadium Corporation and The Sigma Group donated easements for the trail and helped to finance development and re-naturalization activities). The state trail, Wisconsin’s first in an urban area, officially opened in 2000 on the Valley’s west side and was connected to Sixth Street in the Valley’s east end in 2007.

Construction of Miller Park for the Milwaukee Brewers also commenced in late 1996, and was completed in 2001. As part of the project, 260 acres immediately surrounding the park were improved through the expenditure of $72 million in government funds, with $36 million from the State of Wisconsin, $18 million from Milwaukee County, and $18 million from the City of Milwaukee. Much of this went to improve accessibility to the stadium and the west end of Valley through freeway relocation, new entrances and exits, and new roads and walkways. Numerous amenities and landscaping features were also added around the stadium that complemented the Hank Aaron trail and provided Brewer fans with a glimpse of what a revitalized Valley could look like.

On the opposite end of the Valley, long-term discussions about replacing the almost 100-year-old Sixth Street Viaduct were also beginning to bear fruit. In 1991, the city and state had signed an agreement affirming the City of Milwaukee as the lead agency responsible for the design and construction of the viaduct. Construction costs of $50 million were to be shared between the state (75%), county (12.5%), and city (12.5%). Despite several delays, construction commenced in 2000, and what could have been a stand-alone bridge project was now touted as a “Gateway to the Menomonee Valley.” The sleek, sail-like cable-stayed bridge took 15 months to construct and slopes down 900 feet (274 meters) from the north end of the Valley to bring vehicles and people down to the Valley floor at Canal Street, then slopes back up to meet the south end.

With major new access points on the west and east ends of the Valley, the next major infrastructure project was the reconstruction of Canal Street to connect the two points. The city and state began to reconstruct Canal Street from the Sixth Street Viaduct west to 25th Street east beginning in 2004. That project included pavement reconstruction, new traffic signals, a railroad spur, a multi-use trail, and a roundabout at 25th Street. In the summer of 2004, the governor of Wisconsin and mayor of Milwaukee jointly announced a package under which $5 million in federal transportation funds and $3 million in city money would be used to extend Canal Street from 25th Street west to Miller Park. The project was completed in 2006 and was estimated to cost over $40 million in total, with approximately $2.5 million for demolition and site remediation.

More attention has been given to pedestrian and bicycle mobility in the Valley, with improvements to stairwells

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12 Wisconsin Department of Natural Resources, Henry Aaron State Trail, Feasibility Study Master Plan and Environmental Assessment (Madison: Menomonee Valley Greenway Advisory Committee, National Park Service, and Wisconsin Department of Natural Resources, 1996).
descending into it from the many overpasses and construction of the Valley Passage, which opened on November 8, 2010. The Valley Passage re-establishes a historic connection from Milwaukee’s south side to the Menomonee Valley. It was constructed through a partnership between the Wisconsin Department of Transportation, Wisconsin Department of Natural Resources, the City of Milwaukee, Menomonee Valley Partners, and the Urban Ecology Center. The DOT led the design and construction of the Valley Passage and Trail extension, while it and the other partners acquired land and secured funding from federal (which covered more than 80% of costs) and other sources (e.g., DNR’s Knowles-Nelson Stewardship Program). The City of Milwaukee maintains the trail lighting, bridge, and retaining walls.

To ensure that new development in the Valley met sustainability-oriented objectives, the Sixteen Street Community Health Center, MVP, and the City initiated consultation in 2002 to develop more concrete guidelines for green building and family-sustaining wages. The Menomonee Valley Sustainable Design Guidelines provide guidance and lessons learned from other projects to help simplify sustainable design, enhance building performance, improve aesthetic quality, and expedite the municipal and state permitting and approvals process. The first iteration of the guidelines was completed in 2004, in line with the U.S. Green Building Council’s LEED rating system, and touches on the following issues:

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According to the MVP, 12 companies have incorporated green building elements into their projects, and in 2011 the Valley will hit a milestone of one million square feet of facilities built using the Menomonee Valley Sustainable Design Guidelines.\(^1\)

In 2002, MVP also convened a workgroup of business and community representatives to establish a family-sustaining living wage target for the Valley. In 2003, MVP recommended that employers moving into the Valley pay a wage of $12 per hour. In 2005 this recommendation was formally adopted as policy for land sales by the city. This wage was double the minimum wage in Wisconsin, which had been raised to $5.70 per hour in 2005 from the previous rate of $5.15 per hour. Employers are also encouraged to provide health insurance to those in their employ. Employers not offering the Family Sustaining Wage for all employees are asked to prepare a “Sustainable Wage Plan” summarizing the steps they will take to meet the family-sustaining wage in the medium term of one to three years. MVP also recommended that employers recruit a workforce reflective of Milwaukee’s population and recruit workers via several local nonprofit organizations. Given that the Menomonee Valley is in a federal Renewal Community, employers can also qualify for significant tax credits ($1,500 per person) if they hire workers who live in the community.

In order to track progress toward sustainability, the Sixteenth Street Community Health Center collaborated with the University of Wisconsin-Milwaukee on the Menomonee Valley Benchmarking Initiative. The core objectives of the MVBI are: (1) to raise awareness in the community regarding the current state of the Menomonee Valley and the progress made towards its revitalization; (2) to create an information clearinghouse on data related to environmental, economic, and social indicators; (3) to promote the principles of sustainability in an urban context by exploring issues and assembling data in a more holistic manner that considers economic, environmental and social concerns; (4) to generate a practical synthesis of the raw data for the benefit of a wide variety of users; and (5) to stimulate research interest in the Valley as a complex laboratory for studying urban environments. In 2001, Indicator Work Group meetings were conducted to identify key “issues of concern” for the Valley, and to select specific “indicators” for investigating those issues. The Economic Work Group identified four key issues and 21 benchmarks, the Social/Community Work Group identified four key issues and 18 benchmarks, and the Environmental Work Group identified four key issues and 12 benchmarks.\(^1\)

Preparing the first MVBI report involved identifying stakeholders willing to supply existing data or gather new data, and then to report the results. While some of the data could be gathered from existing government datasets, a significant amount had to be collected from scratch. For this reason, it was felt that establishing a protocol and making arrangements for future data collection was an important component of the MVBI process. The results of the first State of the Valley study in 2003 were disseminated through a short summary pamphlet and a project website, while a more formal hard copy and web report were produced for the 2005 study.\(^2\) The reports commence with an overall introduction to the Valley and the MVBI,

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17 Menomonee Valley Partners, Guidelines, 5.


19 For more information about the MVBI process see De Sousa et al., 2009.

20 Menomonee Valley Benchmarking Initiative, 2005 State of the Valley: Evaluating change in Milwaukee’s Menomonee Valley, (Milwaukee: Sixteenth Street Community Health Center, Department of Environmental Health and the University of Wisconsin-Milwaukee, Center for Urban Initiatives and Research, 2005), www.mvbi.org
and include maps of the study areas. Indicator analyses are then sorted into three sections - Economy, Environment, and Community - and each section commences with an introductory page that highlights the most important results from the section and presents an index of the issues and indicators examined. The analysis of each indicator addresses three fundamental questions: (1) What has been measured? (i.e., benchmark, sources of data, and methodological approach); (2) Why is it important? (i.e., explains the indicator’s role in achieving sustainability); and (3) How are we doing? (i.e., describes the performance of each indicator). The analysis of each indicator is summarized on a single page, while tables, figures, and/or maps are employed to help clarify the results by providing a snapshot view of performance. Following the indicator analyses, a section entitled Vital Signs presents raw data by Census tract that is intended to be used by local community groups for their planning and programming activities. On the whole, the MVBI has been attempting to educate the public, inform policymaking efforts, and monitor the performance of renewal activities by gathering analytical information reflective of overall redevelopment in the area. It should be noted that the same funding awarded by the U.S. EPA to prepare the present case study, one of a series, is also being used to conduct the 2012 MVBI study.

Project Development

Redevelopment of the 140-acre Milwaukee Railroad Shops property in the western end of the Valley into an industrial center provided the most exciting opportunity for stakeholders to convert sustainable visions, designs, and guidelines into a reality. In 2002, the Sixteenth Street Community Health Center, together with the City of Milwaukee and other sponsors, organized a national design competition referred to as Natural Landscapes for Living Communities to plan the redevelopment and greening of the property, even before it had been acquired by the city. Once home to a cluster of railroad-related manufacturing plants that started operation in 1879, the property had been abandoned in 1985 when the Milwaukee Road went bankrupt. The blighted site later became the subject of Milwaukee’s largest eminent domain action, and the Redevelopment Authority of the City of Milwaukee eventually acquired the land from Chicago-based CMC Heartland Partners for $3.55 million in August of 2003.

The land use, infrastructure, and sustainability visions that had evolved during the planning and design charrette exercises were now entrenched as criteria presented to the four finalist design teams: 21

- to design an industrial park accommodating at least 1.2 million square feet of development;
- to extend Canal Street;
- to expand the Hank Aaron State Trail;
- to interconnect the railroad property to Mitchell Park and neighborhoods to the north and south of the Valley;
- to devise site-specific storm and flood water management techniques;
- to resolve site-specific environmental and geo-technical issues;
- to landscape the area; and
- to establish community connections to the site by means of open space planning, educational opportunities, and signage.

21 Sixteenth Street Community Health Center, Menomonee River Valley National Design Competition, Executive Summary (Milwaukee: Competition sponsored by the Sixteenth Street Community Health Center, Menomonee Valley Partners Inc., the City of Milwaukee, the Milwaukee Metropolitan Sewerage District, Wisconsin Department of Natural Resources and Milwaukee County, 2002), 1.
The winning design was selected in the summer of 2002. It was put forward by the team of Wenk Associates, Applied Ecological Services, and the architecture, planning and engineering firm HNTB. It incorporates the full range of criteria listed above and involves the integration of natural process and development in a manner that recognizes the Valley as an industrial and transportation hub and seeks to regenerate the landscape while reconnecting the community. The design provided for 70 acres of light industrial development, a mile segment of the Hank Aaron State Trail, and 70 acres of streets, parks, and natural areas along the banks of the Menomonee River. From this design, the city generated the Menomonee Valley Industrial Center and Community Park Land Use Plan in 2006 to guide redevelopment.

To make the site “shovel ready” for redevelopment, the City established a $16 million dollar Tax Increment Financing District in 2004 to pay the cost of site remediation, demolition, filling and grading, stormwater utilities, local roadways and infrastructure. The site required massive cleanup, demolition, removal, and management of six miles of brick sewers, asbestos, and over a million square feet (93,000 m²) of old building foundations, as well as the trucking of 700,000 cubic yards of fill from a nearby interchange project to create an environmental cap that would protect human health and the environment and raise the site out of the flood plain. The City of Milwaukee has aggressively raised funds for remediation and redevelopment activities, winning more than 20 local, state, and federal grants and dozens of private donations totaling $24 million. The goal of the city was to achieve flexible closure for the site such that future property owners were not required to manage environmental closure of their individual properties. In addition to soil contamination, many new buildings constructed in the Valley also need passive methane/soil gas collection systems that are funded in part by public tax credits and incentives.

The Menomonee Valley Community Park portion of the Shops site provides an amenity for businesses located in the Valley and green space for local residents. Material reuse has been an important component of the park's development, with building debris used to create landscaped mounds, highway project fill to raise the site, crushed concrete to build stormwater conveyance structures, glass to make pathway railings, beams to build park benches and tables, etc. The stormwater portion of the park provides essential infrastructure by conveying, storing, and treating stormwater for the adjacent parcels in the industrial site, as well as for Canal Street and other internal roads. The shared stormwater facility makes it unnecessary for developers to purchase and set aside land to build their own private detention ponds, saving them money and also allowing the city to maximize the build-out of the industrial site. Annual management costs are shared through fees among individual business owners in the industrial center and the City of Milwaukee.

Some of the park space was not economically feasible to develop due to its odd shape, and some portions contain demolition debris converted into vegetated bluffs that are encumbered with environmental use restrictions consistent with the Wisconsin Department of Natural Resources-approved Remedial Action Plan for the area. Stakeholders are working together to transform a vacant railroad switching yard from the site, known as Airline Yards, into a 24-acre public park. This project will include riverfront paths, community gardens, and new bridges to connecting it to adjacent communities. The park will become part of the Hank Aaron State Trail and serve as an outdoor classroom for the Urban Ecology Center, a nonprofit environmental education and stewardship group.

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22 Sixteenth Street Community Health Center, Menomonee River Valley National Design Competition (Milwaukee: Sixteenth Street Community Health Center, Department of Environmental Health, 2002), 20-24.
24 City of Milwaukee, Menomonee Valley Industrial Center and Community Park Master Land Use Plan (Milwaukee: City of Milwaukee, Redevelopment Authority of the City of Milwaukee, 2006), 9.
26 City of Milwaukee, Menomonee Valley Industrial Center, 13.
Since preparation of the site in 2006, six buildings have been constructed in the Menomonee Valley Industrial Center and two parcels were recently purchased, with only 6.5 acres remaining in August 2011. The city is ahead of schedule in terms of land sales, despite the economic downturn, and properties have sold for slightly more than initially expected. The industrial projects that have been developed thus far include:27

- Palermo Villa constructed a 135,000-square-foot frozen pizza production facility on nine acres of land in September 2006. Palermo now employs 420 people, and purchased an additional 3.1 acres for a 55,000-square-foot expansion.
- Badger Railing fabricates ornamental iron and steel for railing, stairs, and other products, completed its facility in the summer of 2007, and currently employs 41 people.
- Caleffi Hydronic Solutions makes solar water heating and other products, opened its building in the Valley in 2007, and currently employs 28 people. The facility houses its main offices, warehousing and assembly operations, and features radiant heat to warm the floors, natural and energy-saving lighting, as well as solar hydronic heat that supplements the high-efficiency boilers.
- Taylor Dynamometer manufactures engine dynamometers that test engines for power and torque. It opened in May 2008 and currently has 39 employees.
- Derse, a manufacturer of high-tech trade show exhibitions, completed construction of its 160,000-square-foot building in 2009, and was the first industrial building in Milwaukee to receive LEED Silver certification from the U.S. Green Building Council.
- Charter Wire manufactures steel products, and constructed its 160,000-square-foot facility in 2009. It employs 115.
- Ingeteam, a supplier to the wind and solar energy industries, is building a 114,000-square-foot factory that is expected to generate 275 jobs by 2011.
- Suzy's Cream Cheesecakes Inc. is building a 50,000-square-foot facility on 3.5 acres, with completion by spring 2012. The company currently has 52 employees and anticipates expanding once it has developed its new building.
- J.F. Ahern Co., a mechanical contractor, has purchased five acres on which to build a new 67,000-square-foot building for its 65 office workers and fire-extinguisher recharge services.

While most of these firms have relocated from other parts of the Milwaukee region, some foreign firms, such as Ingeteam and Caleffi, have also moved into the Valley. Several new businesses in the Center have also used New Market Tax Credit loans through the Milwaukee Economic Development Corporation for their projects. MVP notes that by 2011 there should be 1,100 jobs in the center, which is on target for its goal of 1,200 jobs.28 The Tax Increment District is also on target to meet its $45 million goal by 2012.

Following the success of the West End’s conceptual design, Wenk and Associates worked with MVP and the city to develop a vision for the central and eastern Valley. Much of the plan deals with connecting the Valley via Canal Street and the Hank Aaron State Trail as outlined above. Several other notable developments that occurred in the central valley include The Sigma Group headquarters in 2003, which raised the bar on sustainable construction in the Valley, the former Stockyards property, for which the living wage guidelines were initially created, and the iconic Harley Davidson Museum.

The development of a new headquarters building for The Sigma Group, an environmental engineering and services company with extensive involvement in Valley affairs, set a high bar for buildings in the Valley. Sigma addressed a variety of soil, groundwater, methane, and geotechnical challenges in the planning, design, orientation, and construction of its facility. Its site also accommodates public access to the Menomonee River with a walkway that borders the river’s edge and links with

27 See http://www.renewthevalley.org/

28 Personal email Correspondence with Corey Zetts, Menomonee Valley Partners on May 17, 2010.
the Hank Aaron Trail. Both the building and site incorporate numerous green building features, including natural day lighting, stormwater management, beneficial reuse of materials, and a high-efficiency HVAC system. The building materials also complement the neighboring drawbridge and blend in with the industrial look of the Valley. Indeed, Sigma was honored with the 2003 Mayor’s Design Award for the project.

Upon completing its headquarters in December 2003, The Sigma Group worked with the Sixteenth Street Community Health Center to evaluate the impact of its project on the Menomonee Valley and in relation to its previous office space. The intent of the study was to provide measurable impacts on several dozen short- and long-term sustainability-oriented benchmarks. Variables examined related to environmental impacts (e.g., soil risk, air emissions, stormwater discharge, tree canopy, resource utilization, increase in public river access), economic/business impacts (e.g., real estate value, annual tax revenue, employment, security, aesthetics), and employment/social benefits (e.g., employee commute, employee morale, employee participation in the community). This study provided an example of how developers should consider the broader sustainability implications of their buildings on the Valley. (It should be noted that the Sigma Group is currently working with members of this Sustainable Brownfields Consortium project on a life-cycle assessment of its property and operations.)

Another notable project across the street from Sigma is the Canal Street Commerce Center, a light industrial and office building on the former Milwaukee Stockyards property that now houses Proven Direct Inc., a commercial printing and direct mail firm, and Helios USA, Wisconsin’s first solar panel manufacturer. At the eastern gateway to the Valley, Harley Davidson constructed a museum that, while initially criticized for its low job density, was praised for incorporating the Menomonee Valley Sustainable Design Guidelines, stormwater treatment areas, and public river access.

With the Menomonee Valley Industrial Center filling up on the Valley’s west end, the city’s focus continues to shift east. The Department of City Development has started to create a detailed development plan for several parcels in the eastern and central Valley. For example, the City of Milwaukee recently proposed a $6.4 million Tax Increment District for the 17-acre Reed Street Yards property to be used for public improvements including new roads, water, sewer, a riverwalk, an extension of the Hank Aaron State Trail, and dock wall repairs. The new district would also help fund construction of building foundations and environmental remediation. Many of the smaller, privately owned parcels are also being primed for redevelopment.

**BENEFITS, BARRIERS, AND LESSONS LEARNED**

While efforts to bring employment back to brownfields face challenges from de-industrialization, Milwaukee continues to press forward in an attempt to reap the substantial benefits that employment-oriented redevelopment brings about. In addition, the city has raised the bar in terms of creating and implanting a vision for sustainability that not only reuses brownfield property, but also incorporates family-supporting wages, sound design, ecological restoration, and linkages to the community.

One key obstacle to incorporating sustainability elements into the Valley’s redevelopment that continues to pose a challenge are the real and perceived costs associated with sustainable design and landscaping. These elements add to initial costs, and it is often difficult to convince companies of their long-term benefits. Remediating brownfields is also more complicated when combined with desires for stormwater management. Fortunately, overcoming these obstacles has been facilitated by the momentum of redevelopment in the Valley, with the main challenge now getting roads and infrastructure expanded to the other parts of the Valley where demand is increasing. To overcome the challenges, interviewees highlighted


30 City of Milwaukee, *TID 75 – Reed Street Yards, Periodic Report* (Milwaukee: City of Milwaukee, Department of City Development, 2009b).
the need for more funds to encourage sustainable elements and a better understanding among government officials, as well as private businesses and community members, about the benefits of both brownfields redevelopment and sustainability.

In terms of benefits, the primary one for the city has been an increased tax base and employment, as well as indirect benefits associated with multiplier and surrounding property value effects. A key benefit to the city of incorporating sustainable elements into the development of the Valley is that it has already been a “deciding factor” for several companies in choosing the Valley because it complements their mission. Companies also like the many amenities offered in the Valley.

Valley redevelopment has increased confidence in the city’s brownfields program and has facilitated its ability to attract funding from upper levels of government. It has also led to greater support for tackling more ambitious large-scale brownfield projects in other parts of the city that involve merging reindustrialization and sustainability elements, such as Century City and the Inner Harbor. Century City, also referred to as the 30th Street Industrial Corridor, lies in one of the city's most economically challenged districts. While attracting businesses and jobs is of the highest priority, attention is also being paid to environmental justice issues, public safety, and stormwater management. Akin to the Valley’s early design charrette process, city officials, faculty and students from the University of Wisconsin-Milwaukee, and other public and private sector stakeholders have also set out to re-envision Milwaukee’s Inner Harbor and port area. The Menomonee Valley Partners is leading the charge to revitalize other parts of the Valley, such as the retail district on West St. Paul Avenue on the Valley’s northern border.

Several key lessons that emerge from the Menomonee Valley redevelopment experience that can be applied to other cities interested in sustainable reindustrialization and economic development include:

• Make early efforts to consult and understand the needs of the community and affected stakeholders in order to better incorporate their ideas into visions and plans.

• Involve respected stakeholders and community representatives who were active in the community before the project, will be there throughout the project, and will remain in the community long after it is completed.

• Undertake market research and scientific studies to assess the scope of problems, needs, possible solution strategies, and even post-development impacts, as sound science helps demystify barriers and point to practical solutions.

• Facilitate and support public-private partnerships like the Menomonee Valley Partners that allow for balanced participation of multiple stakeholders; help enhance buy-in and faith in the process; and make stakeholders more willing to compromise, be patient, contribute to the process, and continue to invest in the quality of life of the businesses and residents of the region long after the projects are done.

• Offer early seed funding, such as the EPA grants used in the Valley, to explore sustainability and to help incorporate it throughout the planning, development, and even post-development assessment.
• Ensure that local government, in particular, is willing and capable of playing a central role in visioning, planning, site acquisition, site preparation, project funding, redevelopment, and post-closure activities.

• Work tirelessly to pull together funding from all levels of government and other sources in order to address complex brownfield projects, infrastructure, industrial redevelopment, and sustainability.

It should be noted that while the city of Milwaukee is in the process of replicating the Valley model in other parts of the city, not all of these lessons are being applied. One that is surprising is the failure to create a robust public-private partnership like the Menomonee Valley Partners, which has played such a pivotal role throughout the redevelopment process and continues to both direct and manage the Valley’s activities.

As reported in MVP’s 2009 annual report, Milwaukee’s success in revitalizing the Menomonee Valley includes the following:31

- 300 acres of brownfields redeveloped
- 20 new companies
- 7 company expansions
- 4,200 jobs created
- 45 acres of native plants
- 7 miles of trails
- Every $1 in public investment has leveraged $3.60 in private investment
- Every year 10 million visitors visit entertainment destinations in the Valley
- Taxable property values have gone from $62 million in 2002 to $128 million in 2009
- 900,000 square feet of energy-efficient buildings designed and constructed
- 475 individuals volunteered have their time on boards, committees and working teams
- 260 organizations have offered pro bono assistance

Below is an attempt to list all of the activities and policies aimed at making the Menomonee Valley a sustainable place to work and play. The list of initiatives continues to expand as the stakeholders, particularly the Menomonee Valley Partners, shift from property redevelopment to enhancing operations and quality of life in the district and surrounding communities.

**Economic**
- Land acquisition and assembly
- Infrastructure, access and connectivity
- Financial assistance for cleanup, redevelopment and job creation
- Business Improvement District representation
- Business and employment resources (MVP)
  - Business-to-business networking opportunities
  - Events programming
  - Employee services (health and wellness, yoga)
  - Public safety resources
  - Transportation options
  - Tours of the Menomonee Valley
- Menomonee Valley Development Guidelines

**Environmental**
- Brownfields remediation and land reutilization
- Material recycling
- Stewardship programs (MVP Stew Crews)
- Sustainable Design Guidelines
- Recreation areas and access (Hank Aaron State Trail, Airline Yards, canoeing and kayaking, fishing)
- Urban Ecology Center branch (a private non-profit environmental education and community center)
- Stormwater management
- Native planting
- Landscape and riverbank restoration
- Airline Yards

**Community/Society**
- Public art
- Tours
- Annual events (Bike to Work Week, 5K Run, etc.)
- Harley-Davidson Museum
- Marquette Valley Fields
- Miller Park
- Mitchell Park Domes
- Potawatomi Bingo Casino
<table>
<thead>
<tr>
<th>YEAR</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>1896</td>
<td>Valley marsh filled to prepare site for industry</td>
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<tr>
<td>1996</td>
<td>Miller Park construction and opening</td>
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<tr>
<td>1996</td>
<td>Henry Aaron State Park Trail Feasibility Study, Master Plan, and Environmental Assessment</td>
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<tr>
<td>1998</td>
<td>Market Study, Engineering, and Land Use Plan for the Menomonee Valley</td>
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<tr>
<td>1998</td>
<td>City of Milwaukee receives a U.S. EPA Brownfields Redevelopment Pilot Grant for the Valley</td>
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<tr>
<td>1999</td>
<td>Menomonee Valley Partners established</td>
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<td>1999</td>
<td>Sixteenth Street Community Health Center Awarded EPA Sustainable Development Challenge Grant</td>
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<tr>
<td>1999</td>
<td>Menomonee River Valley Design charrette</td>
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<td>2002</td>
<td>National design competition</td>
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<td>2002</td>
<td>Sigma Environmental Services, Inc., Area-wide Groundwater Investigation Report for the Menomonee River Valley Brownfields Demonstration Pilot Project</td>
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<td>2002</td>
<td>Sixth Street Viaduct constructed</td>
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<td>2003</td>
<td>Menomonee Valley Benchmarking Initiative - first report published</td>
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<tr>
<td>2004</td>
<td>Sigma Group Building opens</td>
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<tr>
<td>2006</td>
<td>Menomonee Valley Industrial Center and Community Park Master Land Use Plan</td>
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<tr>
<td>2006</td>
<td>Opening of Canal Street</td>
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<tr>
<td>2006</td>
<td>Harley Davidson Museum breaks ground</td>
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<tr>
<td>2006</td>
<td>Stockyards property breaks ground</td>
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<td>2006</td>
<td>Menomonee Valley Industrial Center’s first tenant - Palermo’s Pizza</td>
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<tr>
<td>2006</td>
<td>Falk Corporation celebrates 150 years in the Valley</td>
</tr>
<tr>
<td>2010</td>
<td>Valley Passage opened</td>
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</table>
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The Sustainable Brownfields Consortium is an interdisciplinary group of researchers and technical advisors who are analyzing best practices for sustainable redevelopment of brownfields and the environmental, economic and public health benefits that can result. Funded by a grant from U.S. EPA, the project is a collaboration of the University of Illinois at Chicago (where it is based), University of Illinois at Urbana-Champaign, University of Wisconsin-Milwaukee, Ryerson University, Resources for the Future, Kandiyo, and Hellmuth + Bicknese Architects. The project website is at www.brownfields.uic.edu.