

THE ECONOMIC AND FISCAL IMPACT OF WISCONSIN'S BROWNFIELDS INVESTMENTS



UWW WHITEWATER FISCAL AND
ECONOMIC RESEARCH CENTER &
REDEVELOPMENT ECONOMICS

For the Wisconsin Economic
Development Association

November, 2015

Staff Paper 015.4

Contributors

CO - PRINCIPLE RESEARCHERS

RUSS KASHIAN, PH.D.

EVANS PAULL

Fiscal Agent

Roger Nacker

Wisconsin Economic Development Institute, Inc.

Editing and Advising

Nancy Frank, PhD

UWM

John Stibal

City of West Allis & First-Ring Industrial Redevelopment Enterprises, Inc. (FIRE)

The following state agencies provided information for this report:

Wisconsin Department of Natural Resources
Wisconsin Economic Development Corporation
Tax Incremental Financing, Wis. Dept. of Revenue

Data Administration and Auditing

Raquel Huppert, Academic Department Associate

Data Collection and Entry

Steven Schmidt

Patrick Fogarty

Taylor Griffith

Derrek Grunfelder-McCrank

Taylor McDarison

Shane Otten

Austin Saari

Emmett Storts

Tyler Thomas

George Uihlein

Alexander Walker

Research Geographer

Tyler Tomaszewski

Research Associate, Coordination & IMPLAN Analysis

Patrick Fogarty

Jay Klubertanz

Brownfield Remediation Economic Impact Study Sponsors

Kyle H. Harmon, President
Whitnall Summit Company
6737 West Washington Street
Suite 3470
Milwaukee, WI 53214

Arthur Harrington
Godfrey & Kahn, S.C.
780 N Water St
Milwaukee, WI 53202

William P. Scott
Gonzalez Saggio & Harlan LLP
111 E. Wisconsin Ave., Suite 1000
Milwaukee, WI 53202

Brian Lanser
Quarles & Brady LLP
411 East Wisconsin Avenue #2350
Milwaukee, WI 53202

Wayman Lawrence
Foley & Lardner LLP
150 E Gilman St
Madison, WI 53703

David P. Misky
Redevelopment Authority of the
City of Milwaukee
756 North Street Suite 400
Milwaukee, Wisconsin 53202

Terri E. Preston
Baker Tilly Virchow Krause, LLP
10 Terrace Ct #1
Madison, WI 53718

John F. Stibal, President
First-Ring Industrial Redevelopment Enterprise (FIRE)
7525 W. Greenfield Ave.
West Allis WI. 53214

Steward Wangard, Chairman/CEO
Wangard Partners, Inc.
1200 North Mayfair Road
Milwaukee, WI 53226

Steve Kramer, Sr. Vice President
U.S. Bancorp Community Development Corporation
1307 Washington Ave., Suite 300
St. Louis, MO 63103

Joel Lee, President
Van Buren Management, Inc.
788 N. Jefferson Street
Suite 800
Milwaukee, WI 53202

Table of Contents

Executive Summary	1
I. Introduction.....	5
II. Background.....	6
A. Wisconsin Brownfields – the Big Picture.....	6
B. Wisconsin as a Brownfields Leader	6
C. Brownfields Incentive Programs at Work in Wisconsin	7
III. Methodology	9
IV. Profile of Sites Assisted.....	10
A. Sources of Public Financing Assistance	10
B. Redevelopment Status.....	15
V. Jobs and Investment.....	16
A. Re-Use Summary.....	16
B. Investment and Temporary Impacts of Construction	17
C. On-going Impacts and Permanent Jobs	17
D. Distressed Areas.....	19
E. Rural and Small Town.....	19
VI. Fiscal returns to State and Local Government.....	21
A. Leverage Ratios	21
B. Temporary Construction Impacts	22
C. On-going Revenues from the Operation of Business Occupants	23
D. Local tax Revenues.....	24
VII. Economic Development.....	25
A. Industrial and Manufacturing	25
B. Service Sector Drivers – Office and Technology.....	27
C. Transforming Waterfronts	29
D. Tourism	31
VIII. Smart Growth and Sustainable Development	32

A.	Vehicle Miles Traveled and Greenhouse Gases	32
B.	Land Preserved.....	33
Viii.	Public Purpose - Affordable Housing, Parks, Health Centers, and Public Facilities.....	34
A.	Affordable Housing and Community Development	34
B.	Parks and Open Space.....	35
C.	Health Centers and public services	35
	Appendix 1 – Supplementary Project Summaries	37
	Appendix 2 – Conversion Factors Used to Complete Quantitative Measures for Sites Where Partial Information Was Available	40
	Appendix 3. On-line Site Survey	41
	Endnotes.....	44

EXECUTIVE SUMMARY

Since 1998, the state has provided grants totaling \$121.5 million to private industry and local governments to assist brownfield investigation, cleanup, and redevelopment. When local and federal “brownfields-specific” incentives are added in, the total comes to \$162 million. This study assesses the economic and fiscal impacts of these public investments. In general, the principal finding is that Wisconsin’s brownfields programs are efficiently cleaning up land and re-establishing productive use; in so doing, Wisconsin gains numerous economic, community, and environmental benefits.

CLEANING UP AND PUTTING LAND BACK TO USE

Starting with the basics, the findings are:

- The State brownfields funding programs assisted 703 sites, resulting in 4,713 acres of contaminated land that was at least assessed and/or cleaned up. Of the 703 sites, researchers were able to determine the redevelopment status of 563 sites, a little more than 80 percent of all assisted sites.
- Redevelopment was complete or underway at 356 or 63 percent of the sites where data was available, resulting in 3,393 acres (72 percent of the total acreage) being redeveloped. This is an impressive success rate, given the inherent risks of brownfields projects, as well as the fact that there have been two significant real estate recessions that undoubtedly left many plans on the drawing boards.
- Redevelopment produced 28.2 million sq ft of new/renovated space.

NEW INVESTMENT AND ECONOMIC DEVELOPMENT

Abandoned brownfield sites represent lost economic activity; so analysts look for indicators that the program is successfully replacing that economic activity, while reinforcing the strength of existing communities. The findings are:

- **One-time impacts** – That State’s investment, coupled with local government investments and federal assistance to brownfields, has generated \$3.3 billion in direct total investment (or \$6 billion direct *and indirect* investment) in completed and underway brownfield projects.
- **On-going economic output** – economic activity associated with the businesses now occupying completed projects amounts to \$4.4 billion direct (or \$7.6 billion direct *and indirect*) statewide “economic output.”
- **Permanent jobs** – There were a total of 29,900 direct new and retained permanent jobs (or 54,500 direct *and indirect* jobs) generated in assisted complete/underway brownfields projects. Projects representing an additional 9,100 jobs are planned, thus the total pipeline is 39,000 direct permanent jobs. The State’s leverage ratio for permanent jobs is that it takes \$3,000 in state brownfields funding to leverage one job, a ratio that compares very favorably to several benchmarks.
- **Industrial and manufacturing** – As measured by square feet, the leading re-use sector is industrial, with 9.6 million sq ft of new/renovated space, which accommodated 7,300 new/retained jobs in complete or underway projects. This result is surprising, given the transition of many older industrial areas to office and residential uses. In addition, industrial re-use is highly desirable because industrial jobs are almost entirely “economic base” jobs in businesses that are selling (or exporting) goods and services outside of the region; hence, industrial re-use brings dollars into the region, generating a higher level of prosperity for Wisconsin communities.

- **Office and technology** – The leading job generating sector is office and technology, accounting for 14,700 permanent employees in complete or underway projects. This includes at least eight regional and national headquarters projects that now offer 2,700 jobs, and at least two technology parks that are in relatively early stages of redevelopment, but have the potential to garner 5,000 highly-sought-after jobs.

DISTRESSED AREAS

Brownfields sites are usually in older communities that have been heavily impacted by industrial decline – communities that need an infusion of new economic activity. The key finding is that economically disadvantaged areas received more assistance than more prosperous areas, as indicated by:

- 66 percent of assisted sites were located in census tracts with lower median household income than the state as a whole.
- 53 percent of the sites assisted were located in census tracts where the unemployment rate exceeded the statewide unemployment rate.
- There were 12,400 permanent jobs generated in census tracts that rank below 80 percent of the state median. This represented 50 percent of all permanent jobs that were in GIS-coded census tracts.

FISCAL EFFICIENCY AND TAXPAYER RETURN ON INVESTMENT

- The leverage ratios for the State are: \$1.00 of state funds leverages \$27.25 in total funds; and it takes \$3,000 in state brownfields funding to leverage one job. These leverage ratios compare favorably to several national benchmarks.
- Over half of the state revenue outlay is recouped in state tax revenues from construction activities alone.
- Counting only the direct state revenues generated by the business occupants of newly created space, the state has cumulatively recouped \$1.77 billion, a more than fourteen-fold return on investment.
- On average, a cleaned up and redeveloped site adds \$3.4 million to a locality’s assessable base. Post redevelopment assessed values exceed pre-development values in a ratio of 3.5 to 1. Localities also benefit from rising property values in the area of the redeveloped site and tax revenues other than property taxes.

ENVIRONMENT AND SMART GROWTH

All brownfields projects are located on infill sites that have several advantages as an alternative to sprawl, including re-use of existing infrastructure, and locating jobs closer to the workforce and the unemployed. The consulting team quantified two additional smart growth benefits:

- There were 7,900 dwelling units complete or underway on assisted brownfield sites, all representing infill redevelopment that otherwise may have been built as greenfield/sprawl.
- Wisconsin brownfields are reducing vehicle miles traveled and greenhouse gases by at least 16 to 28 percent relative to alternative growth patterns; and
- Wisconsin brownfields are helping preserve farms and natural areas, estimated at 12,000 acres “saved,” measured cumulatively over the 16-year life of the state incentives.

PUBLIC PURPOSE USES: AFFORDABLE HOUSING, PARKS, HEALTH CENTERS, AND PUBLIC FACILITIES

While all of the projects analyzed serve public objectives, the following projects are direct public purpose re-use:

- Brownfield developers produced 900 units of affordable housing, which was 11.4 percent of the 7,900 dwelling units complete or underway on assisted brownfield sites.
- There were 43 sites that were recorded as developing parks and open space, or preserving naturalized areas. The average size was 7.9 acres, totaling 340 acres.
- Two sites are being developed for community health facilities, totaling 90,000 sq ft.
- 22 brownfield sites have been redeveloped for public facilities, totaling 636,000 sq ft.

CHOICES FOR THE FUTURE

Wisconsin has been a national leader in brownfields redevelopment – the Wisconsin approach has been cited as a model in numerous academic journals and policy reports. Wisconsin policy makers should consider not only the upside benefits of continuing Wisconsin’s leadership position, but also, the cost of inaction.

<i>Benefits of continued leadership on brownfields</i>	<i>The quantitative findings from past brownfields investments</i>	<i>Costs of inaction</i>
<ul style="list-style-type: none"> • Stimulate economic development in existing communities 	<ul style="list-style-type: none"> • \$3.3 billion investments/construction activity in existing communities (one-time impacts) <ul style="list-style-type: none"> ○ \$6.0 billion in direct and <i>indirect</i> investment • \$4.4 billion in on-going direct economic output due to the operations of businesses in redeveloped sites <ul style="list-style-type: none"> ○ \$7.6 billion in direct and <i>indirect</i> economic output 	<ul style="list-style-type: none"> • Blighted neighborhoods • Sprawl • Disinvestment in existing communities
<ul style="list-style-type: none"> • Boost employment in existing communities 	<ul style="list-style-type: none"> • 29,900 new/retained direct permanent jobs in completed/underway projects <ul style="list-style-type: none"> ○ 54,500 in direct and <i>indirect</i> permanent jobs • 27,900 direct temporary construction jobs <ul style="list-style-type: none"> ○ 47,000 direct and <i>indirect</i> temporary jobs related to construction 	<ul style="list-style-type: none"> • Jobs follow sprawl patterns • Jobs lost to other states
<ul style="list-style-type: none"> • Generate jobs/economic activity in distressed areas 	<ul style="list-style-type: none"> • 66 percent of assisted sites located in census tracts with low median household income • 12,400 jobs generated in census tracts below 80 percent of the state median Household income 	<ul style="list-style-type: none"> • Siphon growth to outer suburbs • Continue economic distress for older communities
<ul style="list-style-type: none"> • Improve fiscal health of localities • Increase property values 	<ul style="list-style-type: none"> • Post redevelopment assessed values exceed pre-development values by 3.5 to 1 • The average cleaned up/redeveloped brownfield site adds \$3.4 million to a locality’s assessable base • Spin-off impacts on nearby properties are estimated to add another \$3.5 million to the assessable base 	<ul style="list-style-type: none"> • Lower property values • Unpaid taxes • Increased burden to taxpayers due to tax foreclosure on tax delinquent properties
<ul style="list-style-type: none"> • Produce state fiscal benefits 	<ul style="list-style-type: none"> • The State is recouping tax revenues, annually, that now represent \$119 million (\$208 million in direct and <i>indirect</i> revenues) • State’s brownfields investments recouped 14-fold due to direct project impacts 	<ul style="list-style-type: none"> • Increased cost to provide infrastructure for sprawl development
<ul style="list-style-type: none"> • Reduce greenhouse gas emissions 	<ul style="list-style-type: none"> • Greenhouse gases by at least 16 to 28 percent relative to alternative growth patterns 	<ul style="list-style-type: none"> • Increased greenhouse gas emissions

<ul style="list-style-type: none"> • Preserve farms and pristine land 	<ul style="list-style-type: none"> • “Saved” 12,000 acres from greenfields development 	<ul style="list-style-type: none"> • Development of farms and natural areas
<ul style="list-style-type: none"> • Cleanup and management of environmental risk 	<ul style="list-style-type: none"> • 4,713 acres of contaminated land assessed and/or cleaned up 	<ul style="list-style-type: none"> • Continue health risks • Contaminated soil and groundwater
<ul style="list-style-type: none"> • Create public open space 	<ul style="list-style-type: none"> • 43 sites developed as parks and open space, totaling 340 acres 	<ul style="list-style-type: none"> • Lost opportunity to improve open space
<ul style="list-style-type: none"> • Revitalize neighborhoods • Catalyze development in the surrounding area 	<ul style="list-style-type: none"> • 7,900 dwelling units located in existing communities • 900 units affordable housing 	<ul style="list-style-type: none"> • Blight • Illegal dumping • Vandalism

I. INTRODUCTION

Brownfields in Wisconsin are defined as “abandoned, idle or underused industrial or commercial facilities or sites, the expansion or redevelopment of which is adversely affected by actual or perceived environmental contamination.”¹

Cleaning up and redeveloping brownfields is often heralded as sensible public policy because of the multiple public benefits. Economic development benefits include leveraged investment, revitalized neighborhoods, and employment expansion targeted to the communities that have been hit the hardest by plant closures. Fiscal impacts include the generation of new sources of local revenue derived from previously unproductive land, as well as lowered requirements for investment in infrastructure to accommodate growth. On the environmental side, brownfields redevelopment, when compared to greenfields development, is credited with saving land, reducing air emissions and greenhouse gases, improving water quality through reduced runoff, generally accommodating growth in an environmentally responsible fashion, and eliminating the negative impacts associated with sprawl.

Many brownfield sites are regarded in the real estate industry as among the “toughest” to develop, and brownfields sites generally require financial incentives in order to attract private capital. In comparison with greenfields development, brownfields developers face several barriers: higher upfront costs in site testing and remediation; a longer pre-development phase to address regulatory issues; greater uncertainty due to liability issues, especially toxic tort and other third party liability (issues not covered by the state voluntary cleanup programs); and market-related limitations due to neighborhood conditions.

Wisconsin, like many states that make brownfields redevelopment a priority, has developed several brownfields financial incentives designed to overcome these barriers and maximize multiple economic, community, and environmental benefits. The purpose of this analysis is to quantify the impacts of state and local government brownfields investments, so that budget-watchers and policy makers can better judge the efficacy of these programs.

LA CROSSE - BROWNFIELDS INCENTIVES KEEP CENTURYLINK IN WISCONSIN

A recent article on brownfields in La Crosse referred to the CenturyLink regional headquarters project, indicating that “The Louisiana-based Company was just days from moving its La Crosse operation to Michigan before the state came through with a \$1 million grant to clean the soil.” “That was really, really important,” Bob Brown, CenturyLink’s Vice President for Operations indicated. “We really need it along the Mississippi (River). There are a lot of sites no corporation like ours would take on.” The project anchors the La Crosse Riverside Redevelopment Project.



The CenturyLink project led to 500 jobs in La Crosse

Source: La Crosse Tribune, see [this article](#)

II. BACKGROUND

A. WISCONSIN BROWNFIELDS – THE BIG PICTURE

Wisconsin's history as a manufacturing center means that cleaning up and re-purposing brownfields is not just an environmental and smart growth priority, it is also economic development necessity for the state.

While there are definitional and methodological problems in estimating the number of brownfield sites, one can get a feel for the scope of the problem from the state's past cleanup activities. The Department of Natural Resources (DNR) has overseen or conducted remediation activities at 13,400 properties in the last two decades. Since 2004 (the first year that acreage records were kept) 20,600 acres of contaminated land have been remediated.² These activities have been conducted in 1,774 of Wisconsin's 1,851 municipalities.³ The on-going nature of the problem is also evidenced by new reports of contamination – 1,600 new sites have been reported to DNR in the last five years.

The above site totals, it should be noted, include a larger universe of sites relative to the sites that are the subject of this report. For example, the above site totals include cleanups connected to enforcement orders; whereas, the remainder of this report is concerned only with the subset of sites where financial incentives are a key inducement for parties to *voluntarily* undertake cleanup and redevelopment.

B. WISCONSIN AS A BROWNFIELDS LEADER

Wisconsin was one of the first states to adopt brownfields reforms: Wisconsin passed the Land Recycling Law in 1994. In the subsequent two decades Wisconsin has maintained a well-deserved reputation for innovative approaches, and well-thought out strategies.

The Wisconsin brownfields program has been cited in numerous national publications as a potential model for other states. In the early 2000's a series of reports by Resources for the Future singled out the Wisconsin brownfields program as an example of successful state brownfields policies that other states may want to consider emulating.⁴ The International Economic Development Council issued a report in 2002 indicating that Wisconsin "consistently appear(s) at the forefront of brownfield redevelopment activity."⁵

A later 2010 report by the Environmental Law Institute similarly held up the Wisconsin approach as national model.⁶ Some of the program elements that these reports have held up as exemplary include: a creative and effective approach to institutional controls; developing a program to assist communities with newly-closed industrial plants; developing a model Memorandum of Agreement with the US Environmental Protection Agency; and almost unmatched success in attracting federal dollars to support Wisconsin brownfields projects.

Other reports have focused on specific elements of the Wisconsin approach:

- An extensive report by the University of Washington (for the State of Washington Department of Ecology) drew attention to Wisconsin's on-going stakeholder input through the Brownfields Study Group, whose efforts have led to numerous statutory and administrative changes;⁷
- A Northeast-Midwest Institute report cited Wisconsin as a model for the strategic use of financial incentives;⁸

- Northeast-Midwest Institute cited Wisconsin’s innovative Environmental Remediation TIF program as a creative vehicle for using TIF on brownfield sites;⁹ and,
- An article in the Journal of Environmental Practice held up Wisconsin’s public agency liability protections as a solution to overcoming barriers to public agency acquisition of brownfields.¹⁰

C. BROWNFIELDS INCENTIVE PROGRAMS AT WORK IN WISCONSIN

Wisconsin’s well-thought-out brownfields financial incentives are a critical element of the state’s overall brownfields success. The following program descriptions serve to frame the financial incentives that constitute these critical elements.

STATE BROWNFIELDS PROGRAMS

The primary emphasis (and the beginning point of the assisted sites list) was state programs that are specifically designed to address brownfields. Two state programs have been in continuing operation since 1998:

- WEDC (formerly DNR) Site Assessment Grants – funds are used for site assessments, demolition, asbestos and lead removal from buildings on brownfield sites, UST removal, removal and disposal or treatment of abandoned containers. Public and quasi-public entities are eligible.¹¹ For the impact analysis study sites, SAG grants were the most frequently used incentive, assisting 422 sites, totaling \$22 million, and averaging \$44,200 per site.
- WEDC (formerly Commerce Department) Brownfields Program¹² – funds may be used for environmental remediation activities (including asbestos abatement), demolition, site improvements, and renovation of buildings on sites with demonstrated soil and/or groundwater contamination. Public, quasi-public, and private entities are eligible. As the primary cleanup program, the Brownfields Program is limited to assisting sites where there is not a viable responsible person.¹³ For the impact analysis study sites, Brownfields Program grants assisted 245 sites, totaling \$90.2 million, and averaging \$368,000 per site.

Two additional DNR programs operated for several years, but have been terminated:

- DNR Green Space grants and Public Facilities – Grants to local governments for brownfields re-use as green space/recreational or for public facilities (repealed in 2011); and,
- DNR Sustainable Urban Development Zone (SUDZ) – Pilot program provided funding to seven specific cities to promote cleanup/redevelopment of brownfields (repealed in 2003).

The WEDC Idle Sites program has only been operating for two years:

- WEDC Idle Industrial Sites Redevelopment Program – assists implementation of redevelopment plans for large commercial or industrial sites that have been idle, abandoned, or underutilized for a period of at least five years. Approved projects can use funds for demolition, environmental remediation, or site-specific improvements defined in the redevelopment plan to advance the site to shovel-ready status or enhance the site’s market attractiveness. Public and quasi-public entities are eligible.¹⁴ In 2014 program administrators made six grants averaging \$853,000 and totaling \$5.2 million.

A 2011 report to the Connecticut Governor and state legislature summed it up as follows: “We (in Connecticut) need to emulate the cooperative spirit between regulators and the regulated community that exists in Wisconsin.”

The team also recorded information about a number of sites that gained incentives from other state economic and community development programs, but that information is not comprehensive.

LOCAL PROGRAMS

While the beginning inventory of assisted sites was the state brownfields programs, the consulting team also gained information about local programs that assisted the sites in the state-assisted list:

- Environmental Remediation Tax Increment Financing program (ER TIF) – a variation on tax increment financing designed to help overcome brownfields barriers.¹⁵ The program has been used 19 times with an average TIF amount of \$576,000, totaling \$11 million in brownfields investments.
- Local tax increment financing (conventional TIF);
- Other local commitments, such as CDBG, local bond funds, and local infrastructure investments.

FEDERAL PROGRAMS

Lastly, the team also gained information about federal funds that were used on the state-assisted sites. The federal funds were mostly from EPA, including:

- EPA Brownfields grants to localities – site assessment grants, cleanup grants, and cleanup revolving loan funds;
- EPA grants to the Wisconsin DNR, including:
 - Ready for Reuse Revolving Loan Fund (RLF) Grant;
 - Ready for Reuse RLF ARRA Grant;
 - WI Assessment Monies (WAM).

EPA programs assisted 167 sites and communities with a total of \$58.5 million in grants (including 85 sites totaling \$15.1 million that were administered by Wisconsin DNR). Analysts estimated that 50 percent of these sites overlapped with the state-assisted sites. Therefore, for the impact analysis study sites, EPA Brownfields Program grants assisted 84 sites and communities, totaling \$29.3 million.¹⁶

In a few instances, federal funds from other sources were recorded, but the information is not comprehensive.

BROWNFIELDS-SPECIFIC PROGRAMS

Another way to categorize the programs in the study is to group programs that are “brownfields-specific,” i.e. specifically-designed to overcome the typical brownfields issues of site assessment, remediation, and site preparation. Cross-cutting the level of governments, the results in Table 1 were also collected but are less than comprehensive and dollar numbers in those programs are likely underreported.

Table 1. Categorization scheme for programs analyzed

	<i>Brownfields-specific programs</i>	<i>Other programs sometimes used for brownfields</i>
State	WEDC (formerly DNR) Site Assessment Grants WEDC (formerly Commerce Department) Brownfields Program WEDC Idle Industrial Sites Redevelopment Program DNR Green Space grants and Public Facilities DNR Sustainable Urban Development Zone (SUDZ)	Other state economic and community development programs.
Local	ER TIF	Conventional TIF, CDBG, local bond funds, local tax credits, and local infrastructure investments
Federal	EPA brownfields programs, including several administered by the state: DNR Federal Assessment Grant; Ready for Reuse RLF Grant Awarded; Ready for Reuse ARRA Grant Awarded; and WI Assessment Monies (WAM).	Other federal programs (New Markets Tax Credits, USDA, etc.)

III. METHODOLOGY

Concentration on State and Brownfields-Specific Programs – Analysts were principally concerned with analyzing the impact of the local, state, and federal “[brownfields-specific programs](#).” Within this construct, the greatest attention was paid to the state programs because the central charge to the consulting team was to test the efficacy of state brownfields-related investments. The site inventory, which was the starting point for the impact analysis, consisted of sites assisted by the *state* brownfields programs.

Funding information categorized as “other programs sometimes used for brownfields” (such as, conventional TIF and CDBG; see

Site Information — The study team began with a list of 703 sites that had been assisted by the state Brownfields Programs, [outlined above](#).

State DNR records provided accurate place and funding information for each site, but there were limited state records as to the nature of the actual redevelopment.

The consulting team filled in missing data using the following sources:

- An on-line survey of grant recipients;
- Internet searching for project records (press releases, developer websites, etc.);
- Google Earth Pro for pre-and-post development satellite images of sites, as well as building footprints/sq ft.;
- Co-Star and Loopnet for real estate occupancy, vacancy, tenants, sq ft, and real property taxes; and,
- On-line local government real property tax information.

Using these methods, the team was able to gain information about the status of site redevelopment for 563 sites, or 80 percent of the full inventory. The quantitative impact data presented in the report reflects the information about these 563 sites (unless otherwise specified). There was no projection of the “development-determined” 563 sites to the full inventory of 703 assisted sites.

Order of Magnitude Approach – The job, investment, and tax impacts are all consistent with an “order of magnitude” approach. The most significant source of minor inaccuracies is that, in some instances, researchers were unable to gain primary (original) information about each of the principal data points (sq ft, jobs, and construction/investment). For example, a not infrequent scenario was that researchers were able to find redevelopment square feet and use, but not jobs or construction/investment. The team used a set of conversion factors to estimate the “unknowns” from the “knowns.” The conversion factors represent a conservative application of industry averages and are described in [Appendix 2](#).

Implan and Multipliers — The consulting team used IMPLAN, a Wisconsin-specific input-output model used to estimate: 1) temporary jobs generated by construction; 2) direct and indirect tax revenues; and 3) all indirect job and spending numbers. By capturing the “multiplier effect,” the IMPLAN model allows the reader to see the full impact of new expenditures in a given geographic area. The multiplier accounts for “indirect spending,” such as supplies required for the original product being measured, and “induced spending,” such as money re-circulating in the economy due to employees’ spending. The term “indirect” is used here to reflect both of those categories.

“Gross Impacts” — Lastly, the economic impacts outlined in this report should be characterized as “gross impacts,” rather than “net new” economic impacts. Aside from methodological difficulties in differentiating “net new” economic activity, gross impacts are very legitimate to count in the case brownfields projects, even if the economic activity is only being relocated within the state. Gross impacts are appropriate to quantify because: 1) the site is cleaned up and public health is therefore protected; 2) the negative externalities associated with alternative locations (usually sprawl) are avoided; 3) jobs are located in economically distressed areas and are generally more accessible to lower income populations than alternative locations; and 4) neighborhood blight is eliminated.

IV. PROFILE OF SITES ASSISTED

There were 703 sites that were assisted by the programs outlined above.

There were a total of 915 grants and loans made from all governmental sources (the higher number reflects some projects getting more than one grant).

The land area corresponding to 703 sites assisted is as follows:

- Total acres assisted – 4,713 acres;
- Total acres where redevelopment is complete or underway – 3,393 acres (72 percent of the total acreage)
- Median site size – 1.75 acres; and,
- Mean site size – 7.1 acres.

A. SOURCES OF PUBLIC FINANCING ASSISTANCE

The following funding data corresponds to all 703 sites assisted by state sources. Table 2 summarizes the number and dollar amounts of the public funding sources, by level of government. There were a total of 943 total grants and loans, representing a total public investment of \$354 million.

Table 2. Sources of public financing assistance by level of government

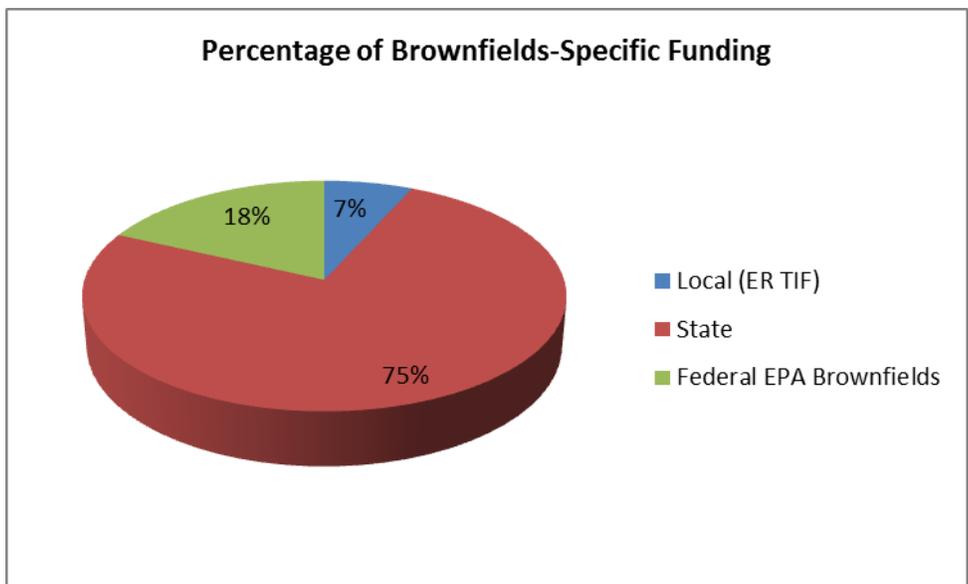
Sites assisted by program	number grants/ loans	% of all grants	\$\$ Amount	% of Total \$\$ Amount
State Brownfields Programs				
Site Assessment Grants (WEDC, previously DNR)	496	52.6%	\$ 21,986,425	6.2%
Brownfields Grants (WEDC, previously Commerce Dept)	245	26.0%	\$ 90,265,725	25.4%
DNR Green Space	17	1.8%	\$ 1,636,814	0.5%
DNR Sustainable Urban Development Action Zones (SUDZ)	20	2.1%	\$ 2,447,317	0.7%
WEDC Idle Industrial Sites	6	0.6%	\$ 5,118,000	1.4%
State brownfields funds sub-total	784	83.2%	\$ 121,454,281	34.2%
Other state funds	2	0.2%	\$ 1,381,700	0.4%
Total State Funds	786	83.4%	\$ 122,835,981	34.6%
Local				
ER TIF	19	2.0%	\$ 10,939,000	3.1%
Conventional TIF	19	2.0%	\$ 137,596,777	38.8%
Other local funds	32	3.4%	\$ 39,092,436	11.0%
Total Local Funds	70	7.4%	\$ 187,628,213	52.9%
Federal				
EPA Brownfields	84	8.9%	\$ 29,271,368	8.3%
Other federal	3	0.3%	\$ 15,027,000	4.2%
Total federal funds	87	9.2%	\$ 44,298,368	12.5%
Total, all funds	943		354,762,562	100.0%

Table 3 and Figure 1 isolate “brownfields-specific” programs, i.e. local, state, and federal programs specifically designed to overcome brownfields impediments. Funding in these brownfields-specific programs totals \$162 million, which is 45.6 percent of *all* public funds expended on the subject sites. Studies in other states have found similar results, i.e. that funding from brownfields-specific programs usually account for less than half of total public funding.¹⁷ Brownfield sites typically have other financing hurdles (more than just site testing and remediation) resulting from market-related impediments and/or the extra costs of converting the land to new uses.

Table 3. Brownfields-specific funding, by level of government

Brownfields-Specific Funds	\$\$ amt	Percentage
Local (ER TIF)	\$ 10,939,000	6.8%
State Brownfields	\$ 121,454,281	75.1%
Federal EPA Brownfields	\$ 29,271,368	18.1%
Total	\$ 161,664,649	100.0%

Figure 1. Funding brownfields-specific funding, by level of government



The state-assisted sites were located in 65 of Wisconsin’s 72 counties and 51 counties received more than one grant. Table 4 represents the geographic distribution of assisted sites by state Economic Development Regions (EDR).¹⁸

For perspective,

presents the percentage of assisted brownfield sites compared to the percent of the state labor force – the two factors are largely parallel.

The region with the greatest number of assisted sites is Milwaukee 7, which accounted for 44 percent of assisted sites. This concentration is to be expected because Milwaukee County, alone, accounted for 42 percent of the state’s manufacturing employment in 1958,¹⁹ and later loss of manufacturing operations left Milwaukee County with a similarly disproportionate number of brownfields sites.

Table 4. Assisted sites by state economic development regions

Economic Development Regions (EDR)	Brownfield Sites Assisted	
	number	% of all sites
Prosperity SW	32	5.3%
Madison Region	81	13.3%
Milwaukee 7	266	43.8%
7 Rivers Alliance	21	3.5%
Centergy	25	4.1%
New North	110	18.1%
Momentum West	31	5.1%
Grow North	7	1.2%
Vision Northwest	35	5.8%
Total	608	100.0%

Note: Includes only sites that were successfully assigned GIS coordinates

Figure 2. State economic development regions by brownfields sites and labor force

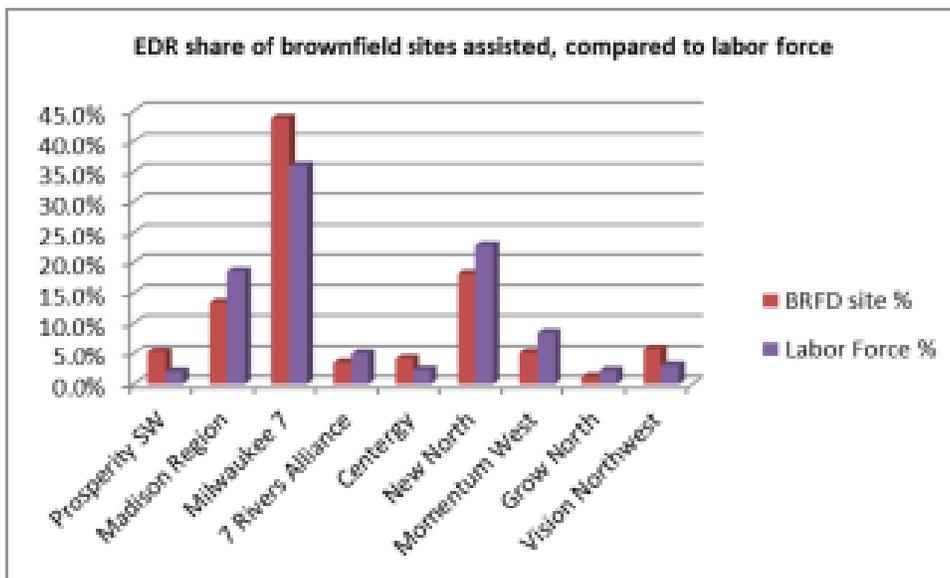
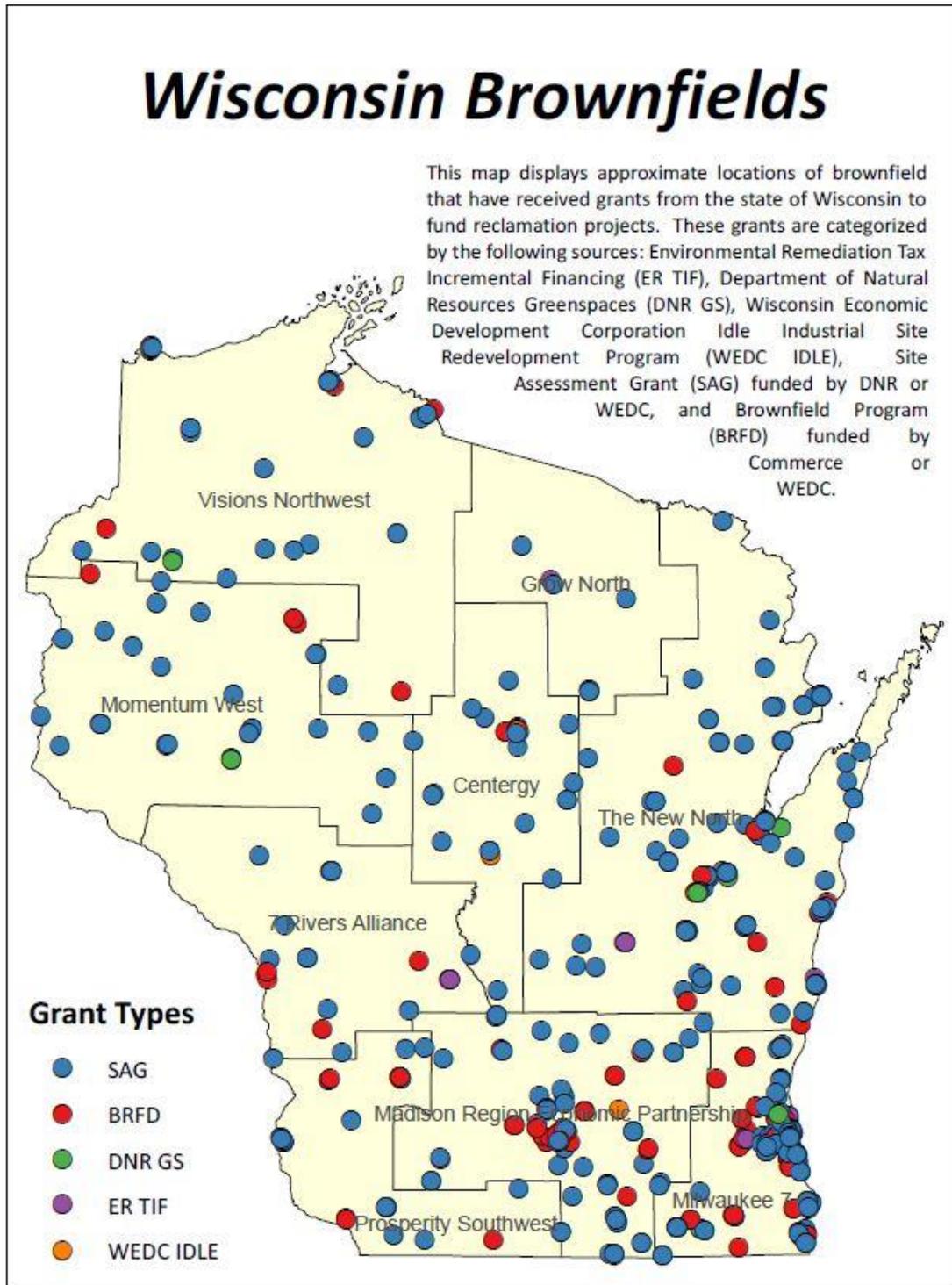


Figure 3 shows the geographic distribution in map form. In relation to small towns and rural areas, there were 237 sites in communities of less than 15,000 population that were assisted by the primary brownfields programs. This was 42 percent of all sites that were GIS-coded for place. This percentage likely understates the actual percentage of sites See also: [“Jobs and Investment/Rural and Small Town.”](#)

Figure 3. Geographic distribution of sites assisted by state programs



B. REDEVELOPMENT STATUS

The team was able to discern the redevelopment status of 563 sites of the 703 sites, a little more than 80 percent.

As indicated in Table 5, a majority (356 or 63 percent) of the sites were complete or underway (“underway” includes under construction and phased projects with partial completion). This is an impressive success rate, given the inherent risks of brownfields projects, as well as the fact that there have been two significant real estate recessions that undoubtedly left many plans on the drawing boards.

Table 6~~Error! Reference source not found.~~ examines the redevelopment rates of the State programs (again, with the inclusion of ER TIF). More than 90% of sites assisted by the Brownfields Grant Program (WEDC, formerly Commerce) are complete or underway.²⁰

The corresponding redevelopment percentage for SAG was just below 50 percent. It should not be surprising that a significant portion of SAG sites have not progressed to redevelopment. SAG grants usually constitute the first public dollars invested in assessing the scope of brownfields issues; further, most SAG sites are initiated by communities well before any

engagement with developers. It should also be noted that there is a time lag – the normal course takes several years from site assessment to redevelopment, so recent grants would not be expected to have redevelopment results.

Table 5. Redevelopment status of sites in the study

Redevelopment Status (sites where redevelopment status was determined)		
	number sites	% of total
Complete	312	55.3%
Under construction	16	2.8%
Phased (partially complete)	28	5.0%
Planned	20	3.5%
No activity	186	33.0%
Interim use	2	0.4%
Total	564	100%

Table 6. Brownfields-specific programs by level of government

	Complete/ Underway*	Planned	No activity	Total	Percent complete/ underway
SAG (WEDC, former DNR)	187	11	185	383	48.8%
Brownfields Grant (WEDC, former Commerce)	155	5	9	169	91.7%
WEDC Idle Sites	4	1	0	5	80.0%
Green Space and Sustainable (DNR, sunset)	15	0	0	15	100.0%
ER TIF	9	2	1	12	75.0%
Total	370	19	195	584	63.4%

* Underway includes projects that are under construction or phased with some completion

Note some sites are counted twice because they received more than one grant

Additionally, the completion of a site assessment alone provides important information about threats to public health or the environment and about the potential costs of remediation and redevelopment. As a benchmark, EPA reports that only 12 percent of the sites funded through the federal Site Assessment Program have progressed to redevelopment.²¹

V. JOBS AND INVESTMENT

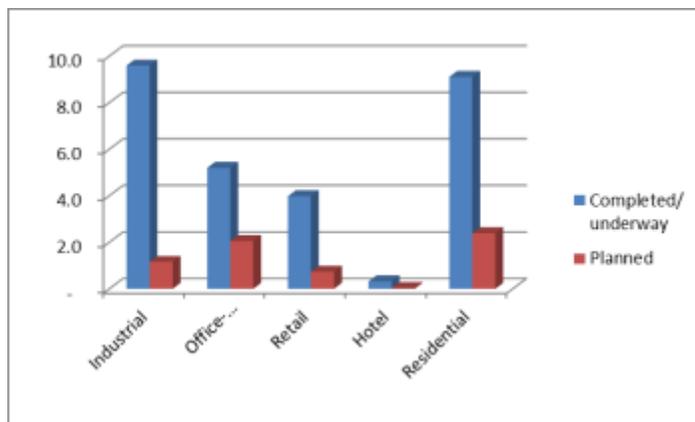
A. RE-USE SUMMARY

Brownfields investments in the 563 sites researched for this analysis produced a total of 28.2 million sq ft of space that was classified as complete or under construction. As indicated in Table 7, the leading re-use sector is industrial (9.6 million sq ft of complete/underway space). The strength of industrial re-use means that the brownfields programs are contributing significantly to the state’s economic development objectives, a point that will be expanded upon in the [Economic Development section](#).

Table 7. Re-use by sector

	Square Feet			Units		
	Completed/ underway	Planned	Total	Completed/ underway	Planned	Total
Industrial	9,596,648	1,158,923	10,755,571			
Office-technology	5,200,047	2,052,114	7,252,161			
Retail	3,981,675	732,546	4,714,221			
Hotel	323,000	36,180	359,180	930	72	1,002
Residential	9,107,540	2,393,334	11,500,874	7,893	2,026	9,919
Total	28,208,910	6,373,097	34,582,007			

Figure 4. Re-use sectors – millions of sq ft completed and planned



As measured just by square footage of the space created (see Figure 4), the rank order of re-use sectors is industrial, residential, office/technology, retail, and hotel.

Projects still in planning (including the planned parts of phased projects) could add another 6.4 million sq ft of space. Among planned projects, residential is the leading sector.

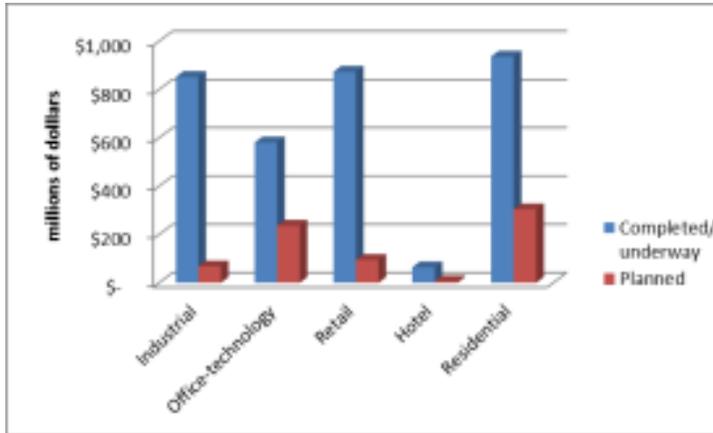
B. INVESTMENT AND TEMPORARY IMPACTS OF CONSTRUCTION

Investments in the 354 projects that were classified as complete or underway amounted to \$3.31 billion (see Table 8). Counting planned projects the investment number exceeds \$4 billion.

Rank ordered, the residential, retail, industrial and office/technology sectors are all a little over or a little under \$900 million in completed/underway projects (see Figure 5).

The mean and median new investment per project is \$11.9 million and \$3.1 million, respectively.

Figure 5. New brownfields investments by sector and status



These investments led to 27,900 direct temporary jobs generated by construction activities. Counting indirect impacts, the total temporary job impact was estimated to be 47,000.

Table 8. Brownfields investments by sector and status

	Completed/ underway	Planned	Total
Industrial	\$ 852,618,290	\$ 68,537,818	\$ 921,156,108
Office-technology	\$ 581,447,544	\$ 236,864,424	\$ 818,311,967
Retail	\$ 874,027,487	\$ 95,169,516	\$ 969,197,003
Hotel	\$ 64,600,000	\$ 7,236,000	\$ 71,836,000
Residential	\$ 937,162,444	\$ 305,059,156	\$ 1,242,221,600
Total	\$ 3,309,855,765	\$ 712,866,914	\$ 4,022,722,678

C. ON-GOING IMPACTS AND PERMANENT JOBS

The businesses that now occupy redeveloped space in assisted brownfields projects generate \$4.4 billion in on-going direct economic output. Counting direct and *indirect* impacts, economic output is estimated to be \$7.6 billion. (For economic output by sector, see Table 12 in the “[Fiscal Returns...](#)” section.)

There were a total of 29,900 new and retained jobs generated in these complete/underway brownfields projects. Retained jobs total 1,470 or 5 percent of all jobs generated by the assisted projects. A retained job is a job that pre-existed the project and continued after the project, partly as a result of the financial assistance. As Table 9 indicates, projects representing an additional 9,100 jobs are in planning, thus the total pipeline is 39,000 jobs.

Table 9. New permanent jobs – completed and planned, new and retained

	New jobs			Retained jobs (complete)	Total complete (new and retained)	Total, (complete and planned, new and retained)
	Completed/underway	Planned	Total completed and planned			
Industrial	6,185	923	7,108	1,133	7,318	8,241
Office-technology	14,670	6,653	21,323	238	14,907	21,560
Retail	7,170	1,487	8,658	100	7,270	8,758
Hotel	388	43	431	-	388	431
Total	28,413	9,107	37,520	1,471	29,884	38,990

Figure 6. Jobs by sector - direct, and indirect (new and retained jobs)

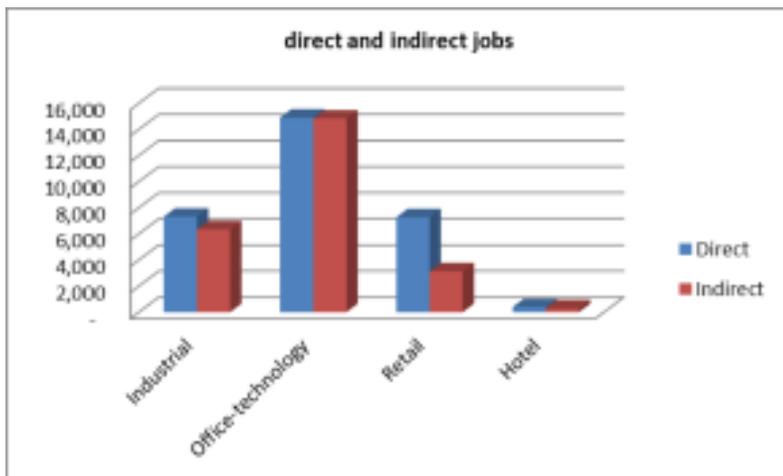


Figure 6 and Table 10 add the perspective of indirect jobs (jobs generated by multiplier impacts, see [methodology section](#)). There were 24,600 indirect jobs generated in complete/underway brownfields projects, bringing the grand total to 54,500 permanent jobs (direct and indirect; new and retained).

Figure 6 also serves to illustrate a point that will be discussed in the [Economic Development section](#) – that there are much greater *indirect* benefits to the state economy from industrial and office/technology investments compared to retail developments.

The single largest employment generator among the assisted brownfields projects was Summit Place, the 2,700-job West Allis redevelopment of the former Allis-Chalmers manufacturing plant.

Table 10. Direct and indirect jobs by sector (new and retained)

	Completed and underway projects		
	Direct	Indirect	Total direct and indirect
Industrial	7,318	6,343	13,661
Office-technology	14,907	14,834	29,742
Retail	7,270	3,126	10,397
Hotel	388	296	684
Total	29,884	24,600	54,483

D. DISTRESSED AREAS

Although there are no statutory mandate to give preference to funding projects in distressed areas, there is usually some degree of correlation between brownfields and distressed areas simply because brownfields are concentrated where industrial and commercial activities “used to be,” i.e. in older communities that have experienced a loss of jobs.

The consulting team analyzed the sites assisted relative to a series of indicators of economic distress, comparing the census tract demographics to the state as a whole. The following results indicate a positive track record of assisting sites in distressed areas:

- Median household income
 - 66 percent of assisted sites (i.e. the census tracts they reside in) ranked as lower in median household income than the state as a whole;
 - 37 percent of assisted sites rank below 80 percent of the State median income;
 - There were 12,400 permanent jobs generated in census tracts that rank below 80 percent of the state median. This was 50 percent of all permanent jobs that were in GIS-coded parcels.
- Poverty rate
 - 54 percent of site/census tracts have a higher poverty rate than the State as a whole (5.6 percent);
 - There were 1,300 new jobs created in census tracts where the poverty rate exceeded 10 percent.
- Unemployment rate
 - 53 percent of site/census tracts exceeded the statewide unemployment rate;
 - There were 4,900 jobs created in census tracts where the unemployment rate was more than double the statewide rate.
- Non-white population
 - 52 percent of sites/census tracts had a higher non-white population percentage than the state as a whole;
 - 3,000 jobs were generated in census tracts where the non-white population exceeded 40 percent.

If there were comparable data for private non-brownfields and not-publicly-assisted real estate development, the above results would contrast more sharply. Absent incentives real estate investment will gravitate toward wealthier communities (where return on investment is predictably higher) and greenfield sites (where there are usually fewer delays and uncertainties).

Some of the larger projects located in census tracts that rank below 80 percent of statewide median income include:

- Beloit Ironworks, described below;
- West Allis/Summit Place – see expanded description under “[Permanent jobs](#),” above.
- Milwaukee’s Stadium Business Park – 450-job redevelopment of the former Ampco Metal site.

E. RURAL AND SMALL TOWN

Brownfields redevelopment in small towns and rural communities may not always generate impressive job and investment numbers, compared to larger communities, but the impact on quality of life may be greater. The closing of a small town’s major employer can leave the town with many signs of decline, from related businesses closing to high unemployment. Similarly, a single dilapidated, abandoned industrial site can have a heavy impact on perceptions of the community, more-so than in larger communities. On the flipside, when eyesores and abandoned sites are redeveloped, the positive impact can shift perceptions from “this town is dying” to “this town is coming back to life,” even if the job and investment numbers are not eye-catching.

It was pointed out in the “[Redevelopment Status](#)” section that about one-half of all Site Assessment Grants (SAG) did not result in redevelopment. In the case of SAG grants made to smaller communities with limited market potential, the SAG program is ideally suited to 1) assess whether the site represents a public health risk; and 2) demolish dilapidated structures that are impacting neighboring properties. In these cases, “removal of a negative” is a gain for the community even if the site is not redeveloped.

Analysts conducted several cross tabulations to reveal the degree to which the Wisconsin brownfields incentives were assisting smaller communities. The findings are as follows:

- There were 237 sites in communities of less than 15,000 population that were assisted by the primary brownfields programs. This was 42 percent of all sites that were GIS-coded for place. When the criteria was lowered to 10,000 population, the result was 192 sites assisted (33 percent of all sites).
- There were 6,640 jobs in completed brownfields projects in communities under 15,000 population. This was 23 percent of all jobs in redevelopment sites that were GIS-coded for place. When the criteria was lowered to below 10,000 population, the result was 1,560 jobs generated (6 percent of all jobs generated).

The sidebar cites three examples of small town projects that may not produce impressive economic development numbers but do represent the major community improvements.

FOCUS PROJECTS - SMALL TOWNS, EYESORES TO ASSETS

POTOSI – BREWERY MUSEUM GIVES NEW LIFE TO LONG-VACANT BREWERY

- **Population:** 688
- **Former:** Potosi Brewery from 1852 to 1972. Vacant for 30 years.
- **Redevelopment:** Vacant since 1972, the former brewery was rehabilitated as the National Brewery Museum. The building also houses the Great River Road Interpretive Center, a restaurant, and gift shop.
- **Key Funding:** Brownfields Grant (Commerce) – \$400,000; Site Assessment Grant (DNR) – \$30,000; Federal Highway Administration’s National Scenic Byways – \$449,574.



National Brewery Museum - Potosi won the national competition for the national brewery designation

VIROQUA – CREAMERY AND BULK PETROLEUM FACILITY CONVERTED TO COMMUNITY-SERVING FOOD COOPERATIVE

- **Population:** 12,872
- **Site:** 525 North Main Street, Viroqua
- **Former:** Creamery, gas station, bulk petroleum storage
- **Redevelopment:** The Viroqua Food Cooperative established an attractive and community-serving reuse of the property. The Coop facility is 7,000 sq ft and employs 55 people.
- **Key Funding:** Brownfields Grant (Commerce) – \$102,000.



Viroqua - community-serving food cooperative

FOCUS PROJECT – JOBS IN DISTRESSED AREAS

BELOIT IRONWORKS CAMPUS – 1,500 JOBS IN A DISTRESSED AREA

Site: 601 - 655 3rd ST, Beloit

Demographics: Census Tract Median HH Income: \$30,607 (70 percent of statewide median income; City median income: \$36,414; Census Tract unemployment rate is 2 ½ times the state unemployment rate.

Former: Foundry

Redevelopment: The Ironworks is a multi-tenant office-technology-industrial redevelopment of a 750,000 sq ft historic loft building. 13 businesses now occupy

450,000 sq ft. Renovations and tenant improvements are planned to total at least \$30 million, generating 1,500 permanent jobs.

State/local Funding: Idle Industrial Sites (WEDC) – \$1.0 million.

Notable: One of the expanding businesses is Universal Acoustic & Emission Technologies, which recently trebled their production, research, and office space in the facility to 122,000 sq ft.



Beloit Ironworks - preservation and multi-tenant re-use

NEILLSVILLE – ABANDONED FOUNDRY NOW AN ICE HOCKEY RINK

- **Population:** 3,782
- **Site:** 1200 East 15th Street
- **Former:** foundry
- **Redevelopment:** The City and the Neillsville Hockey Association developed an ice rink that hosts learn-to-skate classes and hockey clinics for up to 40 students.
- **Key Funding:** Site Assessment Grant (DNR) – \$100,000.



Neillsville ice hockey re-use of foundry

VI. FISCAL RETURNS TO STATE AND LOCAL GOVERNMENT

One of the central questions the consulting team was asked to answer was: are brownfields investments resulting in fiscal gains for state and local government? Are the outlays for brownfields incentives cost-effective, returning tax revenues that are greater than the initial investment?

The relevant expenditure levels are:

- \$121.5 million in state funds brownfields-specific financial incentives over 17 years;
- \$161.6 million in federal, state, and local “brownfields-specific” funding
- \$187.6 million in local government commitments, including ER TIF, conventional TIF and other local funding;
- \$354.8 million in total public funds from all three levels of government.

A. LEVERAGE RATIOS

Total Spending - One indicator of the productivity of financial incentives is the leverage ratio of public funding to all other funds. The conservative way to calculate leverage ratios is to count all public funds on the outlay side, including spending

on sites that have not been redeveloped and sites where information was insufficient to determine redevelopment. On the redevelopment side, the conservative calculation includes only projects that are complete or underway. This is, in effect, like assuming that none of the planned projects will come to fruition and that none of the redevelopment-unknown sites were actually developed, neither of which are likely to be true.

Using this exceptionally conservative methodology, the spending leverage ratios are:

1. \$1.00 of State brownfields funds leverages \$27.25 in total spending²² (or \$24.62 in private funds);
2. \$1.00 of local-state-federal funding in brownfields-specific programs leverages \$20.47 in total funds (or \$18.49 in private funds);
3. \$1.00 of total public funds (all levels of government and all programs) leverages \$9.33 in total spending (or \$8.43 in private funds).

Keep in mind that the methodology did not result in a comprehensive accounting of public funds that were not in brownfields-specific programs; therefore the consulting team has the greatest confidence in the leverage ratios expressed in items 1 and 2, expressed as public funds to total funds.

These results compare favorably to benchmarks. The EPA Brownfields Program has a leverage ratio of \$1.00/EPA funds to \$17.79/total funds, compared to the \$27.25 for Wisconsin state programs. A Northeast-Midwest Institute report that analyzed the results from multiple state and local impact analyses concluded that, on average, brownfields-specific subsidies leverage total investment at a ratio of \$1.00 to \$20.00, about the same as the \$20.47 leveraged by the Wisconsin brownfields-specific programs.²³

Jobs – Another measure of the efficacy of incentives is the amount of funding it takes to create one job. In this case, analysts narrowed the public spending side to funds that supported job-producing (non-residential) projects, but continued to count funds spent whether the project was completed or not. Only completed or underway job-creating projects were counted. The findings were:

1. It takes \$2,900 in state brownfields funding to leverage one job;
2. It takes \$3,900 in local-state-federal brownfields-specific funding to leverage one job;
3. It takes \$8,500 in total public funds (all levels of government and all programs) to leverage one job.

Again, the consulting team has more confidence in items 1) and 2), above.

The Wisconsin results are better (lower dollars per job) than other benchmarks. EPA reports that it takes \$13,700 investment per job in the federal Brownfields Program. The previously referenced Northeast-Midwest Institute report indicates that brownfields programs average \$5,700 in brownfields-specific funding (site assessment, cleanup, and site prep), which would be equivalent to the Wisconsin brownfields-specific funding of \$3,900. Additionally, NEMW finds that it takes \$10,000 to \$13,000 in total public investment to leverage one job, which would be the equivalent of the Wisconsin \$8,500 total public funding.

B. TEMPORARY CONSTRUCTION IMPACTS

As referenced in the [methodology section](#), the consulting team used an IMPLAN input-output model to estimate the tax impacts of the construction activities associated with brownfields sites. See Table 11.

Table 11. State and local tax derived from completed brownfields construction activity

	output	jobs	state taxes	Local taxes	Total taxes
Direct	\$ 3,309,855,765	27,897	\$ 65,786,486	\$ 29,352,783	\$ 95,139,270
Total (direct and indirect)	\$ 5,975,277,356	47,973	\$ 142,213,380	\$ 97,300,440	\$ 239,513,820

Source: IMPLAN and Redevelopment Economics

The primary finding is that the State has gained \$65.8 million in revenues from the direct impacts of brownfields construction activity. This is 54 percent of the total state outlay recouped just in direct tax revenues from construction activities, before any accounting for the impact of on-going economic activity.

C. ON-GOING REVENUES FROM THE OPERATION OF BUSINESS OCCUPANTS

Ongoing tax revenue impacts (see Table 12) are derived from the operations of the business occupants of the brownfield sites. The key finding is that the State is recouping tax revenues, annually, that now represent \$119 million in direct tax revenues and \$208 million in direct and indirect tax revenues, annually. Assuming that the program results were evenly spaced through the 16 years since the inception of the program (i.e. that each year yielded a 1/16th increment of the current total), the state has recouped a total of \$1.77 billion, just in direct tax revenues, a more than 14-fold return on investment.

Table 12. Direct and indirect state and local tax impacts due to on-going business operations

	output	jobs	tax impacts		
			state	local	total state and local taxes
Industrial Direct	\$ 1,284,598,218	7,318	\$ 53,094,011	\$ 50,981,830	\$ 104,075,841
Industrial direct and indirect	\$ 2,136,621,511	13,661	\$ 77,669,504	\$ 72,822,901	\$ 150,492,405
Office-tech direct	\$ 2,615,323,429	14,907	\$ 46,870,809	\$ 18,848,330	\$ 65,719,139
Office-tech direct and indirect	\$ 4,477,007,486	29,742	\$ 98,401,450	\$ 63,065,184	\$ 161,466,633
Retail direct	\$ 488,675,318	7,270	\$ 17,784,130	\$ 17,497,879	\$ 35,282,009
Retail direct and indirect	\$ 886,666,014	10,397	\$ 28,977,712	\$ 27,307,632	\$ 56,285,345
Hotel direct	\$ 57,669,550	388	\$ 1,547,312	\$ 1,147,558	\$ 2,694,870
Hotel direct and indirect	\$ 98,559,663	707	\$ 2,694,498	\$ 2,144,518	\$ 4,839,015
Total direct	\$ 4,446,266,514	29,884	\$ 119,296,262	\$ 88,475,597	\$ 207,771,859
Total direct and indirect	\$ 7,598,854,675	54,507	\$ 207,743,163	\$ 165,340,235	\$ 373,083,398

Source: IMPLAN and Redevelopment Economics

D. LOCAL TAX REVENUES

Table 12 indicates that localities are gaining \$88 million in direct annual tax revenues from the assisted brownfields projects; however, this does not account for the direct property taxes for the subject properties. In order to assess property tax impacts for local government, the consulting team used CoStar records and examined the local government websites for real property information and, as much as possible, tracked pre-and-post redevelopment assessments. Based on 203 sites where the consulting was able to find the relevant data, the conclusion is that on average, a cleaned up and redeveloped site adds \$3.4 million to a locality's assessable base, with post redevelopment values exceeding pre-development values in a ratio of 3.5 to 1. Given that local governments invest heavily in brownfield-TIF projects, the benefit of these increases in assessments is often deferred.

In addition to direct property taxes, localities benefit from: 1) non-property tax revenues; and 2) the appreciation of neighboring properties. The study team did not develop original data with respect to neighboring property impacts, however, national research indicates that cleanups have a favorable impact on properties up to ½ mile away. A National Bureau of Economic Research (NBER) analysis pegs average aggregate increased value of neighboring properties at \$4.1 million (appr 5% increase) per brownfield site (with a median value of \$2.0 million).²⁴

This data suggests that localities may be gaining even more in neighboring property appreciation (mean \$4.1 million) than the direct increase in the property value of the subject site (mean \$3.4 million). Analysts acknowledge that it would take a more in-depth analysis before conclusions could be reached – obviously, these are two completely different data bases and they may not be directly comparable. However, one factor argues that the NBER analysis is likely *understating* the effect as it relates to Wisconsin: that is the NBER analysis was measuring the impact of cleaned up, not necessarily redeveloped, brownfields sites. Had NBER created a subset of cleaned up *and redeveloped* sites (which would be comparable to the Wisconsin subset outlined above) the aggregate gain of neighboring properties would likely be higher than \$4.1 million.

Brownfields TIF and Tax Credits - Localities are often faced with making a decision about incentives that are needed to make a project feasible. For example, a development proposal might require an infrastructure improvement that can't be budgeted from the city's normal capital budget. The developer may propose a TIF that diverts ten years of property taxes. The locality should make this decision looking broadly at both the non-property tax revenues derived from the project and the likely appreciation of neighboring properties. The data above suggests that the appreciation of neighboring properties alone could mean the locality is gaining more than it is diverting to the TIF.

LA CROSSE – 11 BROWNFIELD SITES YIELD \$282 MILLION IN INCREASED PROPERTY VALUE

DNR recently compiled data about state-assisted cleanup and redevelopment in La Crosse. The results were:

- *La Crosse has benefited from \$1.6 million in DNR assistance for site assessment and cleanup;*
- *DNR has overseen 322 completed cleanups in the city; and,*
- *11 redeveloped brownfield sites have yielded \$282 million in increased assessable tax base for the locality.*

Source: Wisconsin Natural Resources Board, 2015
Brownfields Tour, March 2015.
See also [this article](#).

VII. ECONOMIC DEVELOPMENT

Because brownfield sites represent a loss of economic activity due to plant closure or other abandonment of commercial and industrial properties, many policy-makers prefer that the redevelopment of brownfields produce new jobs and business investment, preferably in sectors that are regarded as economic base contributors. Economic base contributors are businesses that are selling (or exporting) goods and services outside of the region; hence they are bringing dollars into the region. Economists regard most industrial uses (especially manufacturing) and many office/technology uses (especially, information services, research, and financial services) as the strongest economic base contributors. Hotels and tourist attractions, because they attract out-of-town visitor spending, are also economic base generators.

Retail and residential uses are not usually regarded as economic base generators, but are often important contributors to neighborhood renewal, addressing blight, and attracting new investment to distressed areas.

A. INDUSTRIAL AND MANUFACTURING

Relative to the other land use sectors, industrial re-use created the largest amount of new or rehabilitated space – 9.6 million sq ft. The 7,300 industrial sector jobs (new and retained) are generators for the economy and are almost always living wage jobs.

Table 13. Industrial redevelopment, existing and planned

	Complete/ underway	Planned	Total
sq ft	9,596,648	1,158,923	10,755,571
construction/ investment	\$ 852,618,290	\$ 68,537,818	\$ 921,156,108
Jobs - new	6,185	923	7,108
Jobs - retained	1,133	-	1,133
Jobs total	7,318	923	8,241

Table 13 also reflects an additional 900 jobs in planned projects, bringing the total to 8,200 jobs in 10.8 million sq ft of space (new and retained, completed and planned).

Table 14. Industrial redevelopment, direct and indirect on-going economic output & fiscal impact multipliers attributed to Industrial Development

	completed and underway projects		
	direct	indirect	Total
Jobs (new and retained)	7,318	6,343	13,661
Economic output	\$ 1,284,598,218	\$ 852,023,295	\$ 2,136,621,511
State tax revenues	\$ 53,094,011	\$ 24,575,493	\$ 77,669,504
Local tax revenues	\$ 50,981,830	\$ 21,841,071	\$ 72,822,901

Table 14 also introduces a new measure: “economic output.” Economic output is the value of the goods and services produced by the businesses that occupy the building and site. The industrial businesses that occupy the

assisted brownfield sites generate direct economic output of \$.1.3 billion (\$2.1 billion in direct and indirect), annually.

There have been numerous noteworthy brownfields industrial redevelopment projects. Three manufacturing success stories are summarized below. Milwaukee’s Menomonee Valley is also written up in [Appendix 1](#). The Menomonee Valley’s job gains total 3,200 workers, and the project has garnered national attention as a model for industrial corridor revitalization.

FOCUS PROJECTS - MANUFACTURING

RIPON ATHLETIC, BERLIN – ER TIF ENABLES LONG-TERM COMMITMENT OF APPAREL MANUFACTURER

- **Site:** 290 Junction Street, Berlin
- **Former:** manufacturing
- **Redevelopment:** The Ripon Athletic project was a critical business retention effort that resulted in the preservation of 140 manufacturing jobs. The cleanup, funded through ER TIF, was a key element in the company’s decision to purchase the property which they had previously leased, thus making a long-term commitment to the community. Ripon is an apparel manufacturer specializing in athletic gear.
- **State/local Funding:** ER TIF – \$500,000.

PALERMO VILLA, MILWAUKEE – FOOD MANUFACTURER EMPLOYS ALMOST 600 IN MEMOMONEE INDUSTRIAL VALLEY INDUSTRIAL CENTER

- **Site:** 3301 W Canal St, Milwaukee, WI 53208
- **Former:** Milwaukee Road rail yard and shops
- **Redevelopment:** Palermo Villa is a frozen pizza food manufacturing business that consolidated multi-city operations at a new state-of-the-art facility in Milwaukee’s Menomonee Valley Industrial Center. The original 135,000 sq ft/270 job facility, built in 2006, has been expanded, now occupying 235,000 sq ft and employing almost 600.
- **State/local Funding:** funding that supported the larger Menomonee Valley Industrial Center includes: Brownfields Program (Commerce) – \$3.5 million; Green Space (DNR) – \$200,000; and TIF – \$24 million.
- **Notable:** “Palermo’s hires from nearby neighborhoods and is an outstanding corporate citizen,” says Milwaukee Mayor Tom Barrett. More than 60% of the company’s employees are minorities.
- **See also:** [Menomonee Valley, Milwaukee – model for industrial corridor revitalization](#)



Palermo Villa in the Menomonee Valley

SKANA ALUMINUM – REVIVING MANUFACTURING IN MANITOWOC

- **Site:** 2009 Mirro Dr., Manitowoc
- **Former:** Mirro Manufacturing
- **Redevelopment:** Skana Aluminum, an aluminum rolling mill, was able to cleanup and reuse the former Mirro Manufacturing plant in Manitowoc. Skana employs 110 people.
- **Key State/Local Funding:** Brownfields Program (WEDC) – \$650,000.
- **Notable:** A presidential visit marked the re-opening of the plant in 2011.



Skana Aluminum - re-using the former Mirro Manufacturing plant

B. SERVICE SECTOR DRIVERS – OFFICE AND TECHNOLOGY

The office and technology sectors include many businesses that sell their services outside the region and are considered economic base contributors. While the industrial sector produced the greatest number of sq ft in brownfields projects, the office/technology sectors produced the greatest number of jobs, because the job density of office projects is usually greater than industrial projects. As Table 15 indicates, there have been 14,900 jobs generated in complete and underway office/technology projects, and another 6,700 are in the pipeline. Completed and planned development projects exceed \$800 million in new investment.

Table 15. Office/technology projects - Completed and Planned

	Complete/ underway	Planned	Total
sq ft	5,200,047	2,052,114	7,252,161
construction/ investment	\$ 581,447,544	\$ 236,864,424	\$ 818,311,967
Jobs - new	14,670	6,653	21,323
Jobs - retained	238	-	238
Jobs total	14,907	6,653	21,560

Table 16 adds the perspective of indirect jobs, adding another 14,800 jobs due to the multiplier effect. The total (direct and indirect) output of the businesses occupying remediated brownfields redeveloped as office and technology space is almost \$4.5 billion.

Table 16. Office/technology projects - direct and indirect impacts

	completed and underway projects		
	direct	indirect	Total
Jobs (new and retained)	14,907	14,834	29,742
Economic output	\$ 2,615,323,429	\$ 1,861,684,059	\$ 4,477,007,486
State tax revenues	\$ 46,870,809	\$ 51,530,640	\$ 98,401,450
Local tax revenues	\$ 18,848,330	\$ 44,216,853	\$ 63,065,184

Headquarters Projects – Wisconsin has been particularly successful in attracting headquarters businesses to brownfield sites. Headquarters-type office users are strong generators for the local economy, partly because they are exporting services to other regions, and partly because hometown headquarters businesses provide leadership in economic development and civic life. The consulting team found at least eight notable headquarters projects, totaling 2,710 jobs, located at brownfields sites that were assisted

by the state brownfields incentives:

- Neenah – Plexis headquarters, 400 jobs at Glatfelter Paper Mill ([see expanded write-up below](#))
- Milwaukee – UMB Fund, 250 jobs in Schlitz Park (see expanded write-up in [Appendix 1](#));
- Milwaukee – The Manpower Group, 900 jobs in Schlitz Park (see expanded write-up in [Appendix 1](#));
- Wauwatosa, ABB Group, 350 jobs in the UWM Innovation Campus;
- La Crosse – CenturyTel (now CenturyLink) communications, 500 jobs in the Riverside Redevelopment Project;
- Milwaukee – Sigma Group, 75 jobs in the Menomonee Valley;
- Eau Claire – Royal Credit Union, 200 jobs at the Phoenix Manufacturing plant site ([see expanded write-up below](#));
- and
- Shawano – CRI (Cooperative Resources, International), 35 jobs in downtown Shawano.

Research and technology centers – Research and technology centers represent another economically important part of the office sector. There are two research and technology parks that have involved redeveloping brownfields sites:

- UWM Innovation Campus ([see expanded write-up below](#))
- Town of Madison Novation campus ([see expanded write-up below](#))

Downtown – Numerous assisted brownfields projects boost the office sector in downtown areas. For example, in Stevens Point a failed downtown mall was revived as a call center and technical college, and local officials attributed a new level of interest in downtown to the activated former mall. See [Appendix 1](#).

FOCUS PROJECTS – HEADQUARTERS

NEENAH – PLEXIS HEADQUARTERS MORE THAN REPLACES LOST GLATFELTER PAPER MILL JOBS

- **Former:** Glatfelter Paper Mill (220 jobs lost when closed).
- **Redevelopment:** Plexis Corp headquarters - 400 jobs, with additional jobs to be added in the future; average salary is over \$80,000. The redevelopment is generating over \$700,000 in local property tax revenue annually. Plexis offers services to businesses in the areas of electronics design, manufacturing, and aftermarket services.
- **State/local Funding:** \$1.2 million for brownfield cleanup, including: Brownfields Grant (WEDC) – \$700,000; federal "Ready for Reuse" grant – \$429,500; and Site Assessment Grant (DNR) – \$97,000



Plexis headquarters

EAU CLAIRE – ROYAL CREDIT UNION, PHOENIX PARK, AND FARMER’S MARKET REVIVE 12-ACRE DOWNTOWN MANUFACTURED GAS PLANT SITE

- **Former** – Manufactured gas plant, Phoenix Steel, Phoenix Manufacturing
- **Redevelopment** – Headquarters for Royal Credit Union (RCU), as well as Phoenix Park, which includes a pavilion that hosts the Eau Claire Farmers' Market, and links to the Chippewa Valley Bike Trail. The RCU and three other businesses total 265 jobs
- **State/local Funding:** Site Assessment Grant (DNR) – \$100,000; Brownfields Grant (Commerce) – \$750,000; Green Space and Public Facilities Grant (DNR) – \$5,000; HUD CDBG grant – \$223,500.



Royal Credit Union, Eau Claire

FOCUS PROJECTS - RESEARCH AND TECHNOLOGY CENTERS

TOWN OF MADISON/NOVATION CAMPUS – FORMER LANDFILL NOW A GROWING TECHNOLOGY PARK

- **Site:** vicinity 2500 Rimrock Road, Town of Madison
- **Former** – landfill
- **Redevelopment:** Novation Campus is a 70-acre technology park redevelopment of a former landfill. The Novation masterplan calls for 1.4 million sq ft of office, technology, and research space, accommodating over 3,000 employees. A recently announced expansion of Exact Sciences, a bio-medical research and development firm, brings the campus to approximately 30 percent completion. Exact Sciences is undergoing a major expansion due to FDA approval of the company's non-invasive screen for colorectal cancer.
- **Key Public Funding:** Brownfields Grant (Commerce Dept.)– \$197,000; Site Assessment Grants (DNR) – \$43,700; EPA brownfields – \$1.2 million; CDBG – \$350,000 low-interest loan



Novation Campus - tech jobs boosted by Exact Sciences

WAUWATOSA/UWM INNOVATION CAMPUS –

- **Site:** Hwy 45 and Watertown Plank Road, Wauwatosa
- **Former:** County-owned hospital, children's home
- **Redevelopment:** Innovation Campus is university-related research park, "a community of Science, Technology, and Commerce." Complete and under construction projects include: Innovation Accelerator; ABB Engineering Building; Residence Inn.
- **State/local Funding:** Brownfields Grant (WEDC) – \$700,000; Site Assessment Grant (WEDC) – \$62,500; TIF – \$12 million



Wauwatosa Innovation Accelerator

C. TRANSFORMING WATERFRONTS

Many cities see their waterfront or riverfront as the primary way for the city to rebrand its image from a declining industrial town to a vibrant live-work-play environment that will make the city more attractive for businesses, residents, and tourists.

Despite the vast potential, these waterfront makeovers are not easy or inexpensive. There are extra costs that include not just brownfields site assessments and remediation, but also:

- Infrastructure costs (larger industrial parcels often lack infrastructure amenable to subdivision);
- Extra costs related to public access to the waterfront, such as esplanades, waterfront trails, and bike paths;
- Shoreline/riverbank stabilization, erosion control, FEMA requirements, and eco-restoration.

Some of the transformative waterfront/riverfront projects include:

- Kenosha/Harbor Park – see below;
- Wausau/Riverfront Revitalization – see below;
- Green Bay – see [Appendix 1](#);
- Oshkosh/Riverfront Park – see detail in the [Parks and Open Space section](#).
- Sheboygan - Coal Pier waterfront redevelopment (See [Appendix 1](#));

On the drawing boards, the City of Waterloo has developed a plan to transform a 20-acre downtown site along the Maunasha River into an office-residential-park mixed use center.

FOCUS PROJECTS – WATERFRONT MAKE-OVERS

KENOSHA HARBOR PARK – MIXED PUBLIC FACILITIES AND PRIVATE REDEVELOPMENT GIVES NEW LIFE TO FORMER SIMMONS/AMERICAN MOTORS PLANT

- **Site:** 55th ST & 5th Ave, Kenosha
- **Former:** mattress manufacturing, car manufacturing, power plant
- **Redevelopment:** waterfront mixed public and private facilities provide amenities for locals and attractions for tourists, while also boosting downtown living. The 69 acre redevelopment features park and public events spaces, two museums (Kenosha Public Museum and Civil War Museum), 400 apartment units, and 6,000 sq ft retail space. Property values at the site increased by \$50 million in five years.
- **Key Public Funding:** Brownfields Program (Commerce) – \$850,000; EPA Brownfields - \$880,000.
- **Tourism:** quoting from the “Visit Kenosha” website, “HarborPark is the epicenter of Kenosha’s beautifully redeveloped Lake Michigan shoreline, encompassing 69 acres and offering an abundance of public activities. Celebration Place at HarborPark’s eastern edge is home to many festivals and events during the summer months and you’ll also find a lakeside promenade, a vintage streetcar line, unique attractions, and much more to enjoy year-round...”¹



Kenosha's Harbor Park features a vintage streetcar line that links public facilities, historic areas, and the waterfront

WAUSAU - RIVERFRONT REVITALIZATION: JOBS AND RIVERFRONT TRAILS REPLACE DECLINING INDUSTRIAL USES

- **Former** – lumber mill, flour mill, railroad tracks, gas stations, numerous warehouses, bulk petroleum fuel, scrap iron yard.
- **Redevelopment:** The Riverfront Revitalization project is a 31.0-acre area in downtown Wausau stretching nearly one mile along the Wisconsin River. It consists of 23 contiguous parcels, all former or current brownfields. Although the project is not yet completed, it has been very successful in leveraging both public and private investment. The three major commercial buildings on the site represent \$40.5 million in private funding, and have generated 840 permanent new jobs. At least \$3 million in private foundation funds have contributed to the development of the riverfront trails, greenspace, and public a plaza.
- **Key State/Local Funding:** Idle Industrial Sites (WEDC) – \$1,000,000; EPA Brownfields – \$600,000; TIF – \$21 million
- **Notable:** Brownfield Renewal Award winner, 2014



\$71 million waterfront transformation in Wausau yields 840 permanent jobs

¹ <http://www.visitkenosha.com/attractions/parks-nature/harborpark>

D. TOURISM

Brownfield sites are often near downtown or riverfront areas where communities are attempting to replace lost industrial activity with gains in the tourism sector.

The sites included in this analysis have been developed for 930 hotel rooms, statewide; representing \$64.6 million investment and creating 388 jobs.²⁵ Brownfields sites have also been used to develop a number of visitor attractions.

The following is an abbreviated list of sites where hotels and attractions that have been successfully incorporated into redevelopment plans:

- Milwaukee - Harley-Davidson Museum Project – (see detail below)
- Burlington – Downtown Hampton Inn (see detail below);
- Green Bay – The Green Bay Children’s Museum (see [Appendix 1](#))
- Potosi – The National Brewery Museum (see detail in [Rural and Small Town](#) section);
- Sheboygan - An 188-room Blue Harbor Hotel, a key element of the mixed plan for the Coal Pier waterfront (See [Appendix 1](#));
- Kenosha - Kenosha Public Museum and Civil War Museum ([see detail in the waterfront section](#));
- Wausau - Riverfront Revitalization ([see detail in the waterfront section](#));
- Racine – Lake Michigan Path (see detail in [Public Purpose](#) section);
- Oshkosh - Riverside Park And Leach Amphitheater ([see detail in the Park and Open Space](#) section);
- Green Bay – St Brendon’s Inn, part of a larger Green Bay riverfront transformation.

FOCUS PROJECTS - TOURISM

MILWAUKEE/HARLEY-DAVIDSON MUSEUM PROJECT, FORMER MORTON SALT

- **Site:** 501 W Canal ST, Milwaukee
- **Former:** Morton Salt
- **Redevelopment:** The \$85 million 130,000 sq ft museum attracts 350,000 visitors annually. The project won several awards including, the “project of year” from Milwaukee Business Journal.
- **State/local Funding:** Brownfields Grant (Commerce) – \$1.9 million; TIF – \$6 million



Harley Davidson Museum attracts 350,000 visitors annually

BURLINGTON – HAMPTON INN HELPS REVIVE DOWNTOWN/TOURISM

- **Site:** 400 North Dodge, Burlington
- **Former:** Bulk petroleum and other vacant/under-utilized properties
- **Redevelopment:** As a local news article put it, “The new, 54-room Hampton Inn isn’t just a new business, but an integral piece in this city’s continuing downtown redevelopment.” The \$5.4 million project on City-assembled parcels complements other recent and planned development, including the Veteran’s Terrace 30,000 sq ft event facility.
- **State/local Funding:** Brownfields Grant (Commerce) – \$330,000; ER TIF - \$2.4 million



New Burlington Hampton Inn - integral to downtown plans

VIII. SMART GROWTH AND SUSTAINABLE DEVELOPMENT

To state the obvious, every brownfields site is previously developed land and therefore qualifies as in-fill rather than new development. A basic tenet of smart growth and sustainable development is that it simply makes sense to channel growth, as much as possible, to in-fill sites. By doing so, growth can reinforce existing communities rather than siphoning economic activity to newly developing areas, jobs can be expanded closer to the work force, and existing infrastructure will be re-used. Those are all “givens” – obvious gains for brownfields vs. greenfields development.

Just to put numbers on this “given,” the Wisconsin brownfields programs have helped stimulate \$3.3 billion in new investment, resulting in 7,900 new residential units, 29,000 jobs, and 19.1 million sq ft of commercial space, all located in existing communities, re-using previously developed land, and taking advantage of existing infrastructure.

Additionally, national research has attempted to quantify two other environmental gains for brownfields and infill development: lower Vehicle Miles Traveled, and preservation of land.

A. VEHICLE MILES TRAVELED AND GREENHOUSE GASES

EPA studies have reported that, nationally, brownfields save 32 to 57 percent Vehicle Miles Traveled (VMT) relative to comparable greenfields sites.²⁶ Greenhouse gases (GHG) and other emissions are assumed to be reduced by approximately the same percentage. Backing up this percentage reduction are a series of findings showing that brownfields are: more dense; closer to the city center; more easily accessed by transit; and more likely to be located in a mixed use walkable neighborhood, all relative to alternative greenfields sites. Each of these factors reduces automobile travel and favors walking, non-auto means of access, and shorter driving trips.

However, the EPA analysis only considers data from five urban areas – small towns and more rural communities were not analyzed. Typically, research of this kind tends to be applied in areas where there is a clear dichotomy between urban/greyfields/infill and greenfields/outer suburban/sprawl, but there is some question as to whether the same percentage reductions are applicable to more small town situations.

Over 40 percent of the Wisconsin assisted brownfield sites are located in towns of less than 15,000 population, which might lead toward a conclusion that a more modest VMT reduction factor should be used for this study.

Digging a little deeper, analysts were able to measure one factor that figures prominently into the VMT-reduction research: residential density. Most studies rank density ahead of other factors which are used to model VMT reduction. Analysts found that the Wisconsin brownfields residential sites average 13.2 dwelling units per acre, which is at least 2 ½ times typical suburban/greenfields densities.

Thus, the limited evidence is that, on the one hand, Wisconsin residential densities would tend to indicate that Wisconsin brownfields may achieve the high level of VMT savings indicated in the EPA study; however, the greater representation of small towns in the Wisconsin site list argues for a lower differential.

Given the data limitations, analysts prefer to use a very defensible and conservative conclusion: that Wisconsin brownfields are reducing VMT's by at least half of the EPA-calculated rate, or 16 to 28 percent relative to alternative growth patterns.

Aside from the energy-efficient location of most brownfields sites, many sites also exhibited green and energy-efficient building design. One of these, Milwaukee's Clock Shadow project, is summarized, [below](#).

B. LAND PRESERVED

The same EPA analysis examines the evidence that brownfields can be credited with saving land relative to alternative greenfields development. This analysis was more generic, across-the-board, rather than specific to the five urbanized study areas. It concluded that, on average, brownfields can be credited with saving between 2 and 4 acres of greenfields for every acre of brownfields redeveloped. The Wisconsin residential density finding (13.2 dwelling units per acre) is consistent with a land savings calculation in the middle of the EPA range, or approximately 3 acres saved for every 1 acre redeveloped.

The study found that 4,000 acres of brownfields had been redeveloped; therefore, approximately 12,000 acres of land has been “saved.”

FOCUS PROJECTS - SMART GROWTH AND SUSTAINABLE DEVELOPMENT

GLENDALE/BAYSHORE TOWN CENTER: MASSIVE MIXED USE INFILL PROJECT CLEANS UP DUMP SITE

- **Site:** 5800 N Bayshore, Glendale
- **Former:** unregulated landfill
- **Redevelopment:** An unregulated landfill and an underperforming shopping area were cleaned up and transformed into a \$350 million mixed use town center totaling 1.3 million sq ft, including: 1.0 million sq ft of retail space; 215,000 sq ft office space; and 113 residential units. In fully utilizing the 49 acre site, the developer had to address significant contamination issues related to the prior unregulated landfill.
- **Key public funding:** Brownfields Grant (Commerce) – \$500,000; TIF – \$40.5 million
- **Smart Growth Characteristics:**
 - Infill instead of new development;
 - Mixed retail, office, and residences – conducive to more walking and fewer or shorter car trips;
 - Served by public transportation;
 - Saves land relative to alternative locations because of greater density and use of structured parking.



Former dump site becomes regional mixed use center

MILWAUKEE/CLOCK SHADOW DEMONSTRATES SUSTAINABILITY

- **Site:** Address: 538 S 2nd Street, Milwaukee, WI
- **Former:** Lead smelter and scrap metal, vacant for 15 years
- **Redevelopment:** The tenant group is an eclectic mix of community serving businesses and non-profits: an ice cream shop, a cheese factory, a wellness collaborative, including the Aurora Healthcare Community Clinic. The roof is occupied by a vegetable garden, which is maintained by the employees and some of the patients of the clinic, as part of their therapy.
- **Key public funding:** Brownfields Grant (Commerce) – \$200,000
- **Sustainability elements include:** a solar passive design; a geothermal system; operable windows; a high proportion (50%) of recycled material; a green roof; and an elevator that uses regenerative energy. The building achieved a 45 percent reduction in energy use relative to conventional construction.



Clock Shadow - vacant for 15 years, now a community-serving health and business center

States frequently invest in programs that are designed to preserve farms and pristine land through such measures as tax credits and conservation and/or agricultural easements. A more holistic approach would be to also consider brownfields investments as part of a land preservation strategy.

VIII. PUBLIC PURPOSE - AFFORDABLE HOUSING, PARKS, HEALTH CENTERS, AND PUBLIC FACILITIES

A. AFFORDABLE HOUSING AND COMMUNITY DEVELOPMENT

Of the 7,900 dwelling units complete or underway on assisted brownfield sites, 900 or 11.4 percent were identified as affordable.

Some of the affordable housing and community development projects include:

- Auxiliary Court , West Bend – 60 units for independent senior living, one block from downtown West Bend;
- Waunakee Village Center – see expanded description, below;
- Milwaukee/King Drive Commons – see expanded description, below.

FOCUS PROJECTS – AFFORDABLE HOUSING AND COMMUNITY DEVELOPMENT

WAUNAKEE: FORMER STOKLEY USA CANNERY REDEVELOPED FOR COMMUNITY CENTER AND ELDERLY HOUSING

- **Site:** 300 East Third St, Waunakee
- **Former:** canning plant
- **Redevelopment:** \$12 million redevelopment for elderly affordable housing (77 units), a community center, and green space; 8 full time and 15 part-time employees.
- **State/local Funding:** Site Assessment Grant (DNR) – \$100,000; and Brownfields Grant (Commerce) – \$60,000; DNR Non-Point Source Grant – \$625,000; TIF paid for infrastructure, open space/stormwater retention.



Waunakee Village Center provides a new community focal point

MILWAUKEE/KING DRIVE COMMONS I – MIXED COMMERCIAL AND AFFORDABLE HOUSING PROJECT BOOSTS HARAMBEE NEIGHBORHOOD

- **Site:** 2721 N. Martin Luther King Dr., Milwaukee
- **Former:** auto repair, and dry cleaning (King and Hadley Property)
- **Redevelopment:** Leveraged \$3.6 million to develop 5,000 square feet of street-level commercial space and 18 affordable new apartment units.
- **Spin-off Redevelopment** – The successful redevelopment of the highly visible King Drive Commons I brownfield site, paved the way for King Drive Commons II, III, and IV, totaling \$20 million in new investment, creating 90 affordable units, and 10,000 sq ft of commercial space.
- **State/local Funding:** Site Assessment Grant (DNR) – \$17,000; Milwaukee City RACM – \$150,000.
- **Under-served Neighborhood:** The Harambee neighborhood is 80 percent non-white, with a 2011 median household income of \$23,700.



King Drive Commons IV - continues progress started by Commons I

B. PARKS AND OPEN SPACE

There were 43 sites that were recorded as developing parks and open space, or preserving naturalized areas. The average size was 7.9 acres, totaling 340 acres.

Some of these park/open space areas are elements of a larger redevelopment plan, such as:

- Wauwatosa/UWM Innovation Campus – preserved 11.5 acres for habitat protection (see detail in the [Service Sector Drivers](#) section);
- Eau Clair/Royal Credit Union – 5-acre Phoenix Park was developed at the same time as the Royal Credit Union headquarters, (see “[Service Sector Drivers](#)” for detail).

Other projects were 100 percent (or nearly 100 percent) park and open space projects, such as, the Oshkosh Riverside Park (see detail below);

FOCUS PROJECT - PARKS AND OPEN SPACE

OSHKOSH – FORMER MANUFACTURED GAS PLANT TRANSFORMED AS RIVERSIDE PARK AND LEACH AMPHITHEATER

- **Site:** 305 Ceape Avenue, Oshkosh
- **Former:** Oshkosh Gas Light Co. former manufactured gas plant
- **Redevelopment:** The 8-acre site was re-envisioned as a riverfront park and community event facility. The Leach Amphitheatre (with capacity for 7,000) hosts large summer concerts including the annual Waterfest, which draws over 60,000 visitors, as well as other sporting events like the Oshkosh half-marathon. The City of Oshkosh leveraged more than \$4 million in public and private donations to make this redevelopment possible.
- **Key Financing:** DNR Green Space and Public Facilities Grant – \$200,000, Community, Development Block Grant (CDBG) (Commerce) – \$25,000; EPA Brownfield Site Assessment Grant – \$59,895.
- **Downtown tourism impacts:** The Downtown Oshkosh website calls attention to Riverside Park as “One of the keys to continued growth for Downtown Oshkosh remaining a destination.”
- **Sources:** DNR and EPA fact sheets and <http://www.downtownoshkosh.com/riverwalk.html>



Riverside Park and Leach Amphitheatre have breathed new life into downtown Oshkosh

C. HEALTH CENTERS AND PUBLIC SERVICES

At least two brownfields sites are being redeveloped as “healthfields:”

- West Allis/Gateway Medical Clinic – see expanded write-up in below.
- Madison/Union Corners – The 11-acre former Rayovac site is planned to be developed for a 60,000 sq ft community health center, 50 to 100 apartments, and associated retail space, totaling an \$83 million investment.

There were 22 brownfield sites redeveloped as public facilities, totaling 636,000 sq ft, including:

- Libraries in Twin Lakes and Mauston.
- School district building in Green Bay;
- Police station in Platteville.

FOCUS PROJECTS: HEALTHFIELDS

WEST ALLIS: GATEWAY MEDICAL CLINIC REPLACES ABANDONED PRINTING AND MANUFACTURING FACILITY

- **Site:** 801 s 70th ST, West Allis
- **Former:** printing and manufacturing
- **Redevelopment:** A \$3 million, 28,000 square foot medical clinic replaced dilapidated buildings on this former printing and manufacturing facility. The project's location (adjacent to the West Allis Town Center) serves the city's community development objectives, while also expanding health care in a low-moderate income neighborhood. The project generated 80 permanent jobs.
- **State/local Funding:** Brownfields Program (Commerce) – \$200,000.



Gateway Medical Clinic – boosting health services in an area that ranks as only 60 percent the area median income.

APPENDIX 1 – SUPPLEMENTARY PROJECT SUMMARIES

For the sake of brevity a number of site example/project summaries were removed from the main report, but added to the appendices.

MENOMONEE VALLEY, MILWAUKEE – MODEL FOR INDUSTRIAL CORRIDOR REVITALIZATION

- **Former:** Industrial and manufacturing corridor.
- **Redevelopment:** Since 1999, 49 companies have moved to the Valley or expanded within the Valley. Between 2002 and 2011, an estimated 3,244 net new jobs were added to the Valley. A healthy 19% of the land in the Menomonee Valley is currently being used for manufacturing, and the job density of new development has well-surpassed an established goal of 1.5 jobs per 1,000 square feet of buildable land. Between 2002 and 2012, taxable property values in the Menomonee Valley business improvement district (BID) increased by an inflation-adjusted 94.4% to a total of \$154 million.
- **Key Funding:** State brownfields programs invested \$4.9 million; including: Commerce Brownfields Program – \$3.5 million; DNR Sustainable Urban Development Zone – \$971,000; DNR Green Space – \$200,000; DNR Site Assessment Grants – \$59,000; and WEDC Site Assessment Grant. Additionally, \$43.3 million in tax increment financing funds and approximately \$150 million from other public sources were needed to acquire and re-position property, upgrade infrastructure, provide for environmental improvements, and improve public amenities and facilities. Of the \$43 million in TIF funds, \$8.3 million were spent on environmental remediation.
- **Model for state-local collaboration in industrial corridor revitalization:** the Menomonee Valley success has garnered national attention as a model for planning and implementing brownfield corridor plans. One comprehensive review particularly cited the critical role of several state agencies, especially the Wisconsin DNR in providing “necessary brownfields cleanup approval processes in a collaborative and timely fashion.”
- **Model for sustainability:** The Valley has numerous sustainability features, including: the Urban Ecology Center Menomonee Valley branch; seven miles of the 14-mile Hank Aaron State Trail; the 24-acre Three Bridges Park; and Stormwater Park, which functions both as open space and as stormwater retention that relieves individual businesses of the need to address stormwater issues on their individual parcels. The Sierra Club ranked the Valley as "One of the 10 Best Developments in the Nation."
- **See also:** [Palermo Villa food manufacturing in the Menomonee Valley Industrial Center.](#)



Menomonee Valley - successful revitalization of industrial corridor viewed as a national model

SHEBOYGAN – COAL STORAGE FACILITY RECYCLED AS HOTEL, WATERFRONT TRAIL, AND MIXED USE REDEVELOPMENT

- **Former:** C. Reiss Coal Company (coal storage and distribution facility)
- **Redevelopment:** the 42 acre South Pier site is in phased redevelopment. Completed sections include the 188-room Blue Harbor Hotel, a 3.3 acre riverfront promenade, and 64 townhomes and apartments. 14 acres remain available for redevelopment.
- **Key Funding:** Brownfields Grant (Commerce) – \$1.1 million; Land Recycling Loan (through DNR) – \$2.6 million; TIF – \$10 million; DOA Coastal Management Program – \$262,000



Blue Harbor Hotel anchors mixed use development

DE PERE'S HISTORIC C.A. LAWTON FOUNDRY REVIVED AS TOWNHOUSE REDEVELOPMENT

- **Former:** Lawton Iron Foundry
- **Redevelopment:** This downtown vacant and declining structure was scheduled for demolition, when Alexander Company emerged with a plan for an historic renovation. After extensive renovation, the building was turned into the Lawton Foundry Town Homes, containing 70 rental units with 660 to 1,800 square feet of space available in townhouse or flats. Thanks to efforts to preserve the historical aspects of the property, the \$5.5 million refurbished former foundry earned a spot on the National Registry of Historic Sites, and the value of the property increased by more than 35 percent.
- **Key State-local funding:** Tax Incremental Finance (TIF) District; DNR technical assistance; Petroleum Environmental Cleanup Fund Award (PECFA) Program (DNR) – \$34,000



Lawton Foundry - historic renovation for 70 rental units

STEVENS POINT – FAILED DOWNTOWN MALL REVIVED AS CALL CENTER AND TECHNICAL COLLEGE, SPURS NEW INTEREST IN DOWNTOWN

- **Former:** closed downtown mall
- **Redevelopment:** When Stevens Point's downtown mall failed, the deadening effect impacted the image of the entire community. A collaborative state-local partnership in a \$6.0 million office re-purposing of the mall has breathed new life into the community. One tenant, Great Lakes Higher Education Services (a college loan servicing group) has over 150 employees at the site. Another, the Mid-State Technical College, will occupy the former J. C. Penney store.
- **State/local Funding:** CDBG funds (through WEDC) – \$750,000; Brownfields Grant (WEDC) – \$178,000; Site Assessment Grant (WEDC) – \$34,000; Stevens Point –\$7.6 million.
- **Spin-off:** Community Development Director Michael Ostrowski cited new interest in downtown due the mall redevelopment, "I think a number of projects that have helped them pull a lot of energy back to downtown, not only with Mid-State, with Great Lakes but with a lot of unique opportunities with the revitalization of the downtown square and the farmer's market, a lot of people are finding out that downtown is once again the place to be for entertainment for business downtown."

MILWAUKEE/SCHLITZ PARK – REJUVENATED BREWERY LANDS UMB FUND SERVICES HEADQUARTERS, RETAINING 250 EMPLOYEES; ANOTHER 100 PLANNED

- **Site:** 235 W. Galena Street, Milwaukee
- **Former:** Schlitz Brewery
- **Redevelopment:** The 1.2 million sq ft former brewery was 35 percent vacant in 2012. A \$34 million upgrade has paid off, with UMB Fund Services' headquarters moving to the facility in 2014. The UMB Fund project retains 250 permanent jobs in the City of Milwaukee, and a 100-job expansion is in planning. UMB Fund Services offers a complete line of products and services to the fund industry, including administration, fund accounting, distribution, and investor services. An earlier headquarters success was The Manpower Group, which brought 900 jobs to Schlitz Park in 2009.
- **State/local Funding:** Brownfields Grant (WEDC) – \$500,000; Brownfields Grant (Commerce) – \$300,000.
- **UMB CEO on choosing Schlitz Park:** "...our most important asset is our outstanding team of associates... Schlitz Park offers a great location and amenities that will contribute to our success in hiring and retaining talented associates..." (John Zader, CEO, August 20, 2013)²⁷



The former Schlitz Executive Building, now the headquarters for UMB Fund Services

GREEN BAY – DOWNTOWN AND RIVERFRONT REVITALIZATION

- **Former:** Industrial Corridor and Shopping Mall
- **Redevelopment:** Since 2008, Green Bay has undergone a major revitalization of its riverfront, with new developments stretching across twelve adjoining parcels along the Fox River. This redevelopment effort has helped to bring resources, services, and jobs to Green Bay residents- ranging from the City Deck, a beautiful, pedestrian-friendly boardwalk along the riverfront, to the corporate headquarters for Schreiber foods, a major dairy supplier that has brought 400 full-time jobs to Green Bay. This project also included the development of four new residential facilities totaling 273 new units, significantly improving the housing capacity of Downtown Green Bay.



Green Bay's revitalized riverfront

- **Key Funding:** WEDC, EPA Brownfields SAG, TIF. The site assessments of these projects were funded using some of the \$800,000.00 in EPA Site Assessment Grants that the City of Green Bay has received. Additionally, the City Deck Landing development and the Children's Museum received \$500,000 and \$565,000 in WEDC Brownfield grants, respectively.

APPENDIX 2 – CONVERSION FACTORS USED TO COMPLETE QUANTITATIVE MEASURES FOR SITES WHERE PARTIAL INFORMATION WAS AVAILABLE

	per sq ft	sq ft per unit	Jobs
Industrial			
cleanup and fix-up	\$ 40		1.0 per 1,000 sf
Rehab	\$ 90		1.0 per 1,000 sf
New	\$ 125		1.0 per 1,000 sf
Retail			
Bank	\$ 240		2.0 per 1,000 sf
Low rise retail	\$ 110		2.0 per 1,000 sf
Supermarket	\$ 115		2.0 per 1,000 sf
Mall- Department Store	\$ 140		2.0 per 1,000 sf
Hotel	\$ 200	500	0.6 per room
Office and Mixed use			
Low rise office	\$ 110		4.0 per 1,000 sf
Mid-rise office	\$ 165		4.0 per 1,000 sf
High-Rise Office	\$ 170		4.0 per 1,000 sf
High-Rise Mixed-use	\$ 220		4.0 per 1,000 sf
Rehab for office or retail	\$ 100		4.0 per 1,000 sf
Research and technology			3.0 per 1,000 sf
Residential			
Low-Rise Apartment (less 5 Stories)	\$ 170	1,200	
Mid-Rise Apartments	\$ 180	1,000	
High-Rise Apartments	\$ 200	1,000	
Townhomes	\$ 190	1,800	
Non-urban condos	\$ 195	1,200	
deductions for cost per sq ft	Multiply X	green bay constn index	
rural/small town	0.85		
built in:			
2014	100%	198	
2013	97.9%	193.9	
2012	96.0%	190	
2011	91.4%	181	
2010	90.4%	179	
2009	88.6%	175.5	
2008	83.6%	165.6	
2007	80.5%	159.4	
2006	77.1%	152.7	
2005	72.9%	144.4	
2004	65.1%	128.9	
2003	64.3%	127.4	

Sources: Redevelopment Economics; Urban Land Institute, R. S. Means for construction costs;

Wisconsin Brownfields Impacts

Survey background and Instructions

INTRODUCTION - The University of Wisconsin/Whitewater Fiscal & Economic Research Center and the consulting firm Redevelopment Economics are producing a report on the economic and fiscal impacts of Wisconsin's brownfields programs. The client is the Wisconsin Economic Development Association.

CONFIDENTIALITY - Feel free to skip any question you feel is asking for confidential information

LENGTH OF THE SURVEY - the survey is designed to take about 10 minutes

INSTRUCTION FOR NOT COMPLETED PROJECTS - please complete all project questions based on the plan for the project.

RESPONSES AND QUESTIONS should be directed to: Patrick Fogarty, FERC@uww.edu, (262) 472-5584

1. Project identification

Project name	<input type="text"/>
Project street address	<input type="text"/>
City	<input type="text"/>

2. The accompanying email included information from state records for this site. If that information is correct, please go on to question 3. Or make any corrections here:

State fund application number	<input type="text"/>
Applicant	<input type="text"/>
Program	<input type="text"/>
State funds	<input type="text"/>
Match funds	<input type="text"/>
Land in acres	<input type="text"/>

3. Your contact information and relationship to the project:

First Name	<input type="text"/>
Last Name	<input type="text"/>
Organization	<input type="text"/>
Telephone	<input type="text"/>
Email	<input type="text"/>
Your relationship to the project	<input type="text"/>

*** 4. Project summary - narrative. Please describe the project, including: the size and nature of the redevelopment; previous use of the property; beneficial community impacts; length of time the property was vacant; and any sustainability features.**

5. What is the status of the project?

	No activity	Activity planned	Underway/under construction	Completed
Site assessment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cleanup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Infrastructure (if needed)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Redevelopment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Add any clarification. If the project is phased (part complete and part planned), please explain the phasing

*** 6. Please indicate dollar amounts in the following categories: (Include existing, underway, and planned expenditures and feel free to estimate):**

Site assessment	<input type="text"/>
Remediation	<input type="text"/>
Vertical development/ rehab	<input type="text"/>
Total public funding	<input type="text"/>
TOTAL INVESTMENT	<input type="text"/>

If there are no redevelopment plans for the site, leave the "vertical development" space blank. Please make sure answers to this question are consistent with the project status in question 5. Add any clarifications in the comments section under question 5.

7. Indicate the re-use of the site, including planned or under construction, (but make sure your response is consistent with question 5)

Sq Ft Office/ technology/institutional	<input type="text"/>
Sq Ft Retail	<input type="text"/>
Sq Ft Industrial	<input type="text"/>
TOTAL Dwelling Units	<input type="text"/>
Dwelling units-Affordable	<input type="text"/>
Dwelling units-Market rate	<input type="text"/>
Dwelling units-Rental	<input type="text"/>
Dwelling units-Ownership	<input type="text"/>
Number hotel rooms	<input type="text"/>
No. of structured parking spaces	<input type="text"/>
Open space or habitat restoration (Acres)	<input type="text"/>
Other	<input type="text"/>

If there are no specific site redevelopment plans, skip this question.

8. If the site was cleaned up to serve an existing business, industry, or industrial park that was already present on the site:

What is the name of the business or industrial park?	<input type="text"/>
How many employees were (or will be) retained as a result of the cleanup?	<input type="text"/>

9. Indicate how many new employees are at the redeveloped site (excluding any associated with temporary construction activities).

Completed:	<input type="text"/>
Under construction/ underway:	<input type="text"/>
Planned:	<input type="text"/>
TOTAL:	<input type="text"/>

If there are no redevelopment plans for the site, skip to the next question

10. Did the redevelopment project stimulate investment in other nearby properties?

- Yes
- No
- Not Sure

If yes, please describe

If the project is still in planning, please go to the next question.

11. Please indicate the degree to which the state assistance (from all sources) made a difference in the project outcome. If the site has not been redeveloped, skip this question.

Check only one box:

- Critical: the project would have been unlikely to have come to fruition absent the state assistance.
- Important: The State assistance helped address important site unknowns and/or lower needed upfront investments, thus aiding project feasibility. State assistance was key but not the only key.
- Contributing: The state assistance was part of a series of measures that aided the project.
- Not Important: The project would have been carried out absent the state assistance.

Add any relevant comments:

12. Please add any additional information that distinguishes the project (such as: major employers attracted; site sustainability or greening; and/or community development spin-offs).

13. For more information, please additionally consult the following person and/or the following website:

Thank you!!! Responses (or questions) should be directed to Patrick Fogarty, FERC@uww.edu, (262) 472-5584

ENDNOTES

¹ (Wis. Stat. § 238.13(a)(1) (1997).

² Danielle Wincentsen, WI DNR transmitted via Email, Barry Ashenfelter (WI DNR) to Evans Paull, July 3, 2015.

³ Brownfields Study Group, “Investing in Wisconsin, Reducing Risk, Maximizing Return,” 2015 Report.

⁴ Resources for the Future: “Brownfields Redevelopment in Wisconsin: Program, Citywide, and Site-Level Studies,” January, 2004; “The Brownfield Bargain: Negotiating Site Cleanup Policies in Wisconsin,” December, 2003; and “Brownfields Redevelopment in Wisconsin: A Survey of the Field,” December, 2003.

⁵ International Economic Development Council and XL Environmental, “Land Use Report,” 2002

⁶ Environmental Law Institute, “Overcoming Barriers to Redevelopment of Petroleum Brownfields and Other Vacant Properties, The Wisconsin Approach,” Final Project Report & Workshop Proceedings, May, 2010

⁷ University of Washington, “Linking Toxics Cleanup and Redevelopment Across The States: Lessons for Washington State,” February, 2009.

⁸ Northeast-Midwest Institute, “Getting Started with Brownfields -- Key Issues and Opportunities: What Communities Need to Know,” Charles Bartsch, April, 2006.

⁹ Northeast-Midwest Institute, “Brownfields and Tax Increment Financing, 2009.

¹⁰ Evans Paull, “Overcoming Impediments to Public Agency Acquisition of Brownfield Sites,” Environmental Practice 11:311–319 (2009).

¹¹ <http://inwisconsin.com/inside-wedc/transparency/programs/site-assessment-grants/>

¹² Also known as “WEDC Environmental Improvement Assistance for Redevelopment;” and, when under the Commerce Department, “Blight Elimination and Brownfield Redevelopment Program.”

¹³ <http://inwisconsin.com/inside-wedc/transparency/programs/brownfield/>

¹⁴ <http://inwisconsin.com/community/assistance/idle-industrial-site-redevelopment-program>.

¹⁵ <https://www.revenue.wi.gov/forms/govtif/erbase.html>

¹⁶ The following methodology was used to calculate EPA brownfields investments in the study sites. The EPA Brownfields Program grants (including those made through the state programs) totaled 167 grants and loans to localities, representing an investment of \$58.5 million (85 grants and loans to specific sites, totaling \$15.1 million, were grants administered by Wisconsin DNR). Note some of these were area benefit, not site-specific, but, for simplicity, they were all counted the same. In order to be consistent with the scope of the impact analysis, analysts needed to isolate EPA funding that was spent on the 703 state-assisted sites. The consulting team was not able to fully correlate the EPA grants with the state-assisted sites; however a sampling of 30 EPA-assisted sites found that 50 percent of the sites were also in the state-assisted list. Applying this factor (50 percent) results in an estimate that the state-assisted site list benefited from 84 federal grants to localities, representing a \$29.3 federal investment.

¹⁷ Northeast-Midwest Institute, “The Environmental and Economic Impacts of Brownfields Redevelopment,” July 2008.

¹⁸ Note that the total number of sites listed here is different than other tables. This is due to the fact that the team was not able assign all sites for longitude and latitude.

¹⁹ US Census of Manufacturing, 1958

²⁰ There may have been a bias in the redevelopment result for the Brownfields Grant Program due to lack of addresses in WEDC and Commerce records. The research team was more likely to identify the site and determine the redevelopment status if the property had been redeveloped than if it had not. There were 28 Brownfields Grant sites where researchers were unable to determine redevelopment status. If 50% of these were re-classified as “No activity,” the Brownfields Grant Program redevelopment rate would be 84 percent, which is still a very high success rate.

²¹ US EPA, Evaluation of the Brownfields Program, July 2012, available at <http://www.epa.gov/swerosps/bf/pdfs/Brownfields-Evaluation-Parts-I-II.pdf>.

²² In this section the term “total” means funds from all sources, including all public sources.

²³ Northeast-Midwest Institute, “The Environmental and Economic Impacts of Brownfields Redevelopment,” July 2008.

²⁴ National Bureau of Economic Research, “The Value of Brownfield Remediation,” Kevin Haninger, Lala Ma, Christopher Timmins, NBER Working Paper No. 20296, Issued in July 2014

²⁵ Note the investment and job numbers for hotels are understated because about one-half of the hotel facilities were in mixed use projects and job and investment numbers were reported there rather than in the hotel sector.

²⁶ US Environmental Protection Agency. “Air and Water Quality Impacts of Brownfields Redevelopment.” October 2011, available at <http://www.epa.gov/brownfields/BFEnvironImpacts042811.pdf>