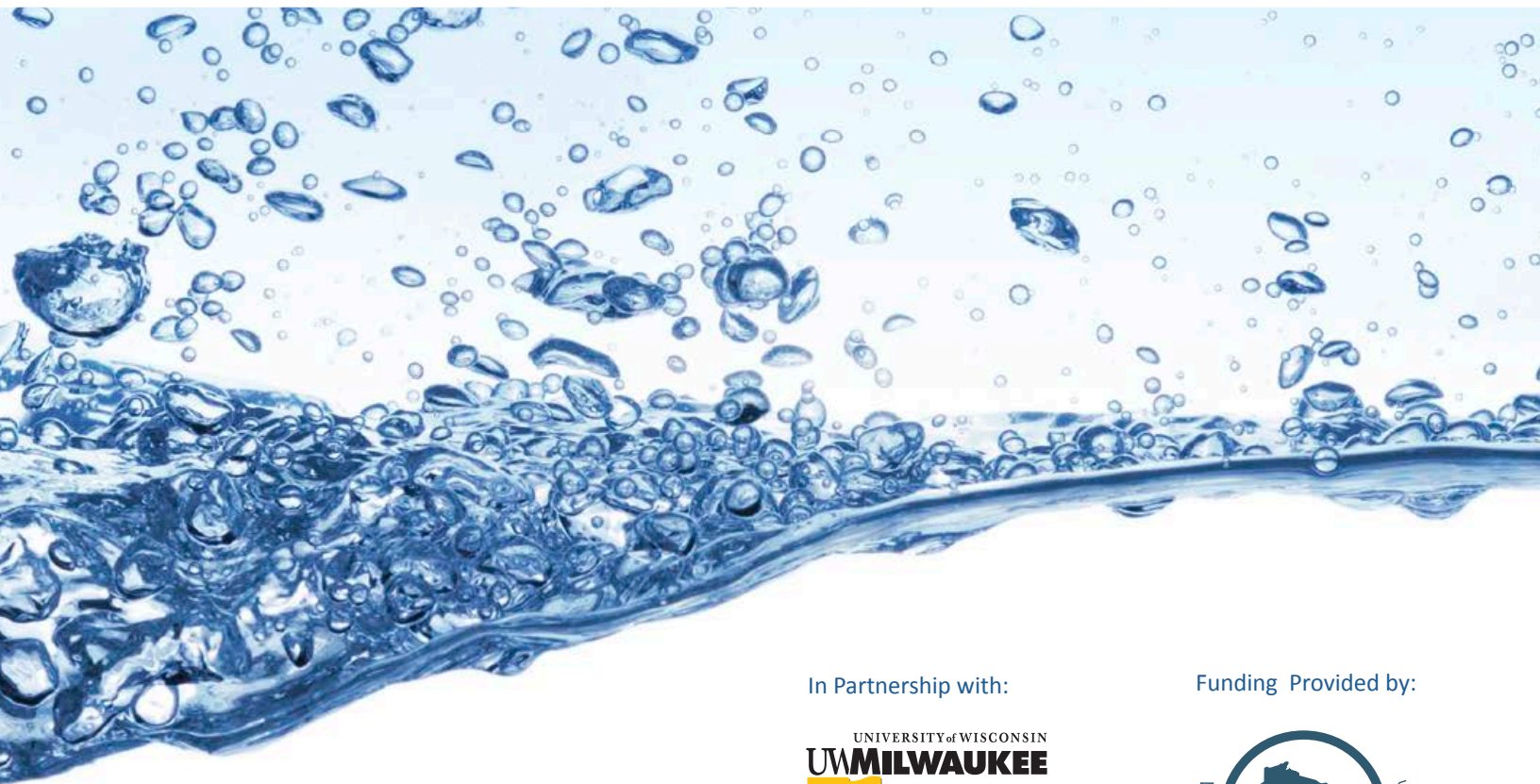


MILWAUKEE
WATER TECHNOLOGY
Economic Investment Analysis 2010-2014 **DISTRICT**



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In Partnership with:



THE WATER COUNCIL

Funding Provided by:



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RIPPLE EFFECTS

What does the rapid expansion of new housing and the introduction of artisan kitchens to an economically challenged metro area have to do with industry cluster development? Everything, if done right.



DEAN AMHAUS, Water Council
President and CEO

Too often the assessment of economic development impact starts and ends with the jobs produced or capital investment made as a direct result of a single project. Industry development efforts take measurement a step further by, for example, gauging growth in sales or employment across participating companies within a geographic area. Still, little attention tends to be paid to the indirect benefits of economic development strategies once deployed.

That's what makes this analysis unique. And it's what defines Wisconsin's water technology cluster as a textbook case study on the profound impact of a comprehensive cluster development approach.

As this report outlines, the stream of economic dividends flowing from Wisconsin's water technology cluster development strategy is rapidly gaining momentum. The Walker's Point neighborhood—a large, economically dormant section of the City of Milwaukee minutes from the city's downtown—has been reawakened. New commercial development, new business creation and new residential options are reinvigorating a once ignored area, creating a preferred destination for development investment from large corporations, small businesses, commercial banks and real estate developers.



LEE SWINDALL
Wisconsin Economic
Development Corporation
Vice President Business And Industry

The City of Milwaukee and the State of Wisconsin have joined a wider partnership of investors to fundamentally transform the urban economic landscape and future of this large area of Milwaukee. It is important for business leaders and policymakers at all levels to understand the value of a successful water technology cluster to economic development goals both locally and regionally.

The water cluster's recent, rapid evolution in Milwaukee, supported by vigorous public-private partnerships, is creating a powerful and unique national success story, with far-reaching ripple effects within the city, the state, the region and the global water industry.

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EXECUTIVE SUMMARY

Water and Walker's Point have been synonymous since the middle of the 19th Century. Whether it was rice production, beer, or commerce, the neighborhood's prosperity relied on a continuous supply of clean, fresh water. George Walker came to Milwaukee in 1834, settled the neighborhood bearing his name, and cemented himself as one of the three founders of the City. He chose the location betting that a settlement near the confluence of the three rivers and the harbor would attract residents. Less than a decade later, Walker's Point became home to Milwaukee's first lager brewery in 1841. Fast forward a century and a half and the neighborhood has become the epicenter of water technology and freshwater research.

This analysis focuses on the impact of investments related to water technology, their associated actions, their place, and their time. The report incorporates social and environmental indicators to complete a holistic triple-bottom-line approach assessment. The time period of the analysis extends between 2010 and 2014. It encompasses portions of Walker's Point, the Fifth Ward, and the Harbor District. The study area is bounded to the north by the Menomonee River, to the east by the Inner Harbor, to the south by Greenfield Avenue, and to the west by Interstate 43/Interstate 94. The report defines these boundaries as "The Water Technology District."

Key Findings

Beginning in 2012, the Walker's Point neighborhood experienced the first in a series of catalytic projects that strategically leveraged private and public funds to establish The Water Technology District (The District) and spur \$211.6 million worth of development. During this time period, cumulative investment increased drastically and development reached a critical mass with \$150.9 million being invested by the end of 2014. Public funds and financing tools supported private equity to secure or support financing at developments like the Global Water Center, Reed Street Yards, and Freshwater Plaza. The cross-sectoral collaboration between government, business, and academia touched off projects that inspired others: initial funds for the Reed Street Yards' tax incremental financing district (TID) supported the Global Water Center, while the establishment and construction of the University of Wisconsin-Milwaukee's School of Freshwater Sciences provided the confidence and stability to encourage the announcement of the development of Freshwater Plaza. The correlation between these key investments, the time in which they occurred, and the subsequent, resulting projects brought a sense of certainty to the neighborhood's capacity and its tremendous potential for growth. These advanced economic development strategies united multiple stakeholders to make strategic investments and trigger large-scale developments. The Water Technology District's progress can be highlighted with these key findings:

1. Since 2010, total investment in The Water Technology District equals \$211.6 million: private investments have totaled \$108.4 million; private/public tools have leveraged \$25.5 million of investments; and, \$77.5 million worth of public funds have secured financing, rebuilt infrastructure, or funded TIDs.
2. Investments in 2013 saw a pronounced increase at \$36.5 million, with 2014 and 2015 seeing additional increases of \$91.9 million and \$60.7 million, respectively.

¹ John Gurda, *Cream City Chronicles: Stories of Milwaukee's Past*, (Madison, WI: Wisconsin Historical Society Press, 2007) 119.

² John Gurda, *The Making of Milwaukee*, (Milwaukee, WI: Milwaukee County Historical Society, 1999) 37.

3. In The District, property values increased by 16.6 percent, or \$56.6 million. The Walker's Point neighborhood saw a 12.8 percent increase overall, while the City of Milwaukee saw an 11.1 percent decrease.
4. Of the 126 development projects in The District, 111 were valued at less than \$1 million. These small scale investments are clustered along South 1st and 2nd Streets and West Pittsburgh Avenue.
5. The City of Milwaukee financed two tax incremental financing districts and infrastructure projects valued at \$21.2 million. The projects included the repaving of South 2nd Street and East Greenfield Avenue; the TIDs include Reed Street Yards and 1st and Greenfield.
6. Through Milwaukee Metropolitan Sewerage District's public/private green infrastructure cost-sharing program, property owners invested \$4.1 million in green infrastructure projects, including green roofs and green streets.

INTRODUCTION

Water and Walker's Point have been synonymous since the middle of the 19th Century. Whether it was rice production, beer, or commerce, the neighborhood's prosperity relied on a continuous supply of clean, fresh water. George Walker came to Milwaukee in 1834, settled the neighborhood bearing his name, and cemented himself as one of the three founders of the City. He chose the location betting that a settlement near the confluence of the three rivers and the harbor would attract residents. Less than a decade later, Walker's Point became home to Milwaukee's first lager brewery in 1841. Fast forward a century and a half and the neighborhood has become the epicenter of water technology and freshwater research.

The neighborhood's legacy and heritage laid the foundation for a renaissance. As it is now reaching scale, stakeholders expressed an interest in quantifying the impact of development in Walker's Point, specifically investments related to water technology and facilities that support it. This analysis focuses on the impact of those investments—their associated actions, their place, and their time. Additionally, the analysis incorporates social and environmental indicators to complete a holistic triple-bottom-line approach assessment. The time period of the analysis extends between 2010 and 2014. It encompasses

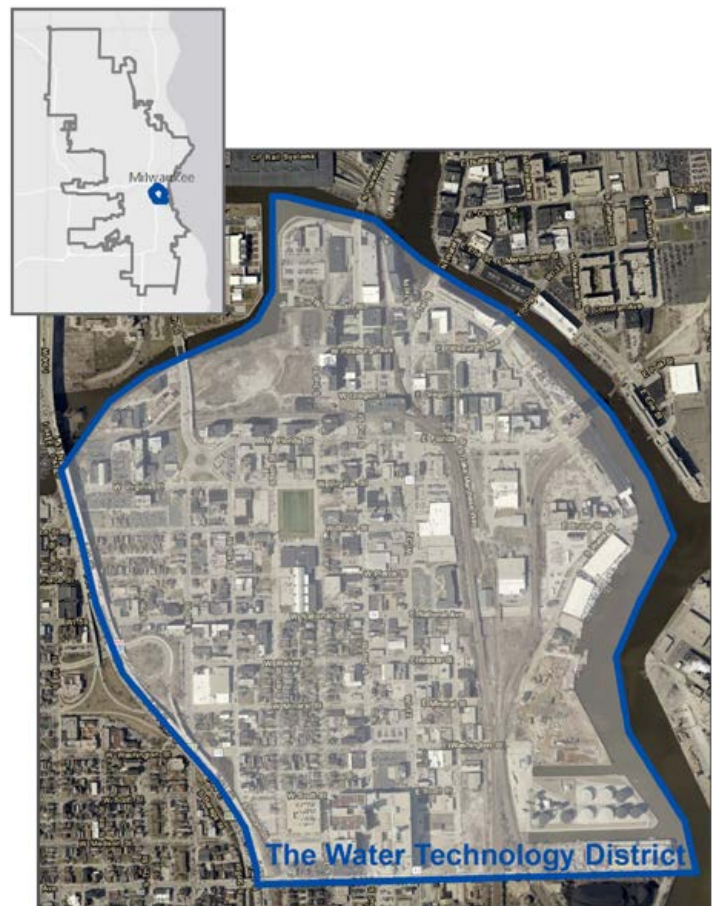


Figure 1: “The Water Technology District” within the Walker's Point neighborhood.

³ John Gurda, *The Making of Milwaukee*, (Milwaukee, WI: Milwaukee County Historical Society, 1999) 37.

⁴ John Gurda, *Cream City Chronicles: Stories of Milwaukee's Past*, (Madison, WI: Wisconsin Historical Society Press, 2007) 119.

portions of Walker's Point, the Fifth Ward, and the Harbor District. It is bounded to the north by the Menominee River, to the east by the Inner Harbor, to the south by Greenfield Avenue, and to the west by Interstate 43/Interstate 94. The report defines these boundaries as "The Water Technology District" within the neighborhood.

As Milwaukee is an "Innovating City" with the United Nations (U.N.) Global Compact Cities Programme, this analysis drew inspiration from the U.N.'s Human Development Index and Inclusive Wealth Index. In the spirit of Milwaukee's international reach, the broad purpose of the analysis was to move beyond the traditional "jobs scorecard" and to adopt a new kind of economic analysis. It sought to quantify the value of the residents and the environment, as well as economic development efforts.

METHODOLOGY

Information and Data Sources

All data and information used in this report were acquired through publicly available sources – print, web-based data bases or information requests. Information in the report is representative of what was available via the public sources and information requests through mid-May 2015.

Study Area

The Walker's Point neighborhood is a diverse community that, historically, has changed its boundaries throughout Milwaukee's history. As population and business shifts impacted the neighborhood, residents redefined its space and extent. As a result, this study recognized those shifts and initially attempted to quantify investment on a broader scale by defining an area of investigation that included Walker's Point in its entirety; however, this area was later redefined to focus solely on the northern portion of the neighborhood.

At present, at least four separate, overlapping planning or strategic action areas exist within Walker's Point. The Near South Side Area Plan and the Walker's Point Strategic Action Plan identify the neighborhood from the perspective of the City of Milwaukee and the plans' respective stakeholders; a private effort has defined an "Innovation District" near the intersection of Florida and Water Streets; and, Harbor District, Inc. is currently beginning a planning and redevelopment process for the Inner Harbor. Each of these plans received consideration during the definition of the study area for this analysis.

Original Study Area

The original study area for this analysis included the Menominee River as the northern extent, the Inner Harbor as the eastern, Lincoln Avenue as the southern, and Interstates 43/94 as the western. This area extended the furthest south to purposefully encompass all development within the Inner Harbor, capture changes in the southernmost residential clusters, and recognize Lincoln Avenue as an economic corridor.

Neighborhood Boundaries in the Walker's Point Strategic Action Plan

In June 2015, the City of Milwaukee—in conjunction with numerous community partners, including the Walker's Point Neighborhood Association—released the Walker's Point Strategic Action Plan. It clearly identified boundaries for the neighborhood. These boundaries did not extend as far south as the "Original Study Area." To ensure this analysis could be incorporated into future planning efforts, the strategic action plan's boundaries were utilized to define the overall neighborhood for this analysis.

The Water Technology District

The initial analysis of data indicated that the majority of financial investment between 2010 and 2014 occurred in the northern portion of the Walker's Point Neighborhood. As a result, the study geography was refined to focus on the area north of E. Greenfield Avenue. This portion of the neighborhood is now referred to as "The Water Technology District" and emphasizes two tax incremental financing districts: Reed Street Yards (TID 75) and 1st and Greenfield (TID 81).

Measures

Rationale

This analysis specifically sought to move beyond a more traditional attempt to count jobs and instead utilized a triple-bottom-line approach. The use of this approach was intended to address multiple topics and areas of interest:

- Track progress in an urban environment after infrastructure improvements moved the neighborhood towards more transit-oriented development;
- Assess the growth of the neighborhood as the influence of Millennials in the real estate market began to control the availability of talent and the stimulation of organic growth;
- Conduct an inventory of amenities in Walker's Point; and
- Collect and analyze a baseline dataset to allow for future assessment in Walker's Point, as well as create a framework to work in other areas within the Transform Milwaukee plan.

Additionally, as the City of Milwaukee is an "Innovating City" with the United Nations Global Compact Cities Programme, the analysis utilized techniques found in the Human Development Index and the Inclusive Wealth Index. The use of these indices helped to further strengthen the triple-bottom-line approach and attempted to quantify sociological improvements in the neighborhood.

Small Business Development and Small-Scale Investments

While the analysis focused on "water-related" investments, specifically those of significant scale, data collected from the City of Milwaukee Department of City Development and stakeholder interviews provided an additional perspective on small business growth. Construction permits highlight renovations and small-scale new construction in the neighborhood; and, records kept by engaged citizens detail development since the late 1990s. To recognize the commitment and contribution of small business owners and developers, the analysis includes specific tables and maps highlighting the volume of small-scale investments as they relate to larger investments.

Investment Sources: Private, Private/Public, and Public

A mixture of private, private/public, and public funds composed the core financing components in The District's major developments since 2010. The cross-sectoral cooperation between government and business efficiently and effectively used public funds to leverage private investment. As a result, the pace at which projects were undertaken began to quicken as The District's real estate market stabilized and investors could determine the positive

outcome of a project with certainty and a higher degree of accuracy. These developments drew attention to The District from private developers, small business owners, and potential residents.

To capture the relationship between private, private/public, and public funds, this analysis created a financial breakdown of each development to understand the relationship between the three different types of financing. Definitions for each type include:

PRIVATE SOURCES include the property owner's equity or a foundation grant; the funds originate solely in the private sector.

A **PRIVATE/PUBLIC SOURCE** is a public program or tool that leverages private capital through tax credits or a loan. Examples: Historic Tax Credits, EB-5, Low-Income Housing Tax Credits, Milwaukee Metropolitan Sewerage District Green Infrastructure financing, and economic development corporation loans.

A **PUBLIC SOURCE** funds projects using taxpayer money. Examples: tax incremental financing districts, brownfield remediation, and the University of Wisconsin System.

INVESTMENT OVERVIEW

Public and private investors committed \$211.6 million to The District between 2010 and 2015: \$108.4 million of private funds built or redeveloped numerous buildings and accompanying green infrastructure; \$25.5 million of private/public funding tools leveraged private capital; and, \$77.5 million of public funds provided additional financing and infrastructure construction.

Table 1: Total Real Estate Investment, 2010-2015

TYPE OF INVESTMENT	AMOUNT
PRIVATE FUNDS	
Private Equity	\$48,753,570
Planned Projects (construction to occur in 2015)*	\$57,000,000
Green Infrastructure (private funds)	\$2,738,743
PRIVATE/PUBLIC TOOLS	
EB-5 Investment	\$12,000,000
Historic Tax Credits	\$6,500,000
New Market Tax Credits	\$4,650,000
Green Infrastructure	\$1,703,385
Milwaukee Economic Development Corporation loans	\$647,000
SBA Community Advantage loans	\$288,220
PUBLIC FUNDS	
UW-System Board of Regents	\$53,600,00
Tax Incremental Financing Districts	\$18,310,770
Infrastructure	\$2,950,000
WEDC – Idle Sites Program	\$1,700,000
	\$750,000
WEDC – Direct Investment (Cash)	\$284,000
General	
TOTAL	\$211,675,688

CUMULATIVE INVESTMENT

2010-2014 Water Technology District, Walker's Point Neighborhood

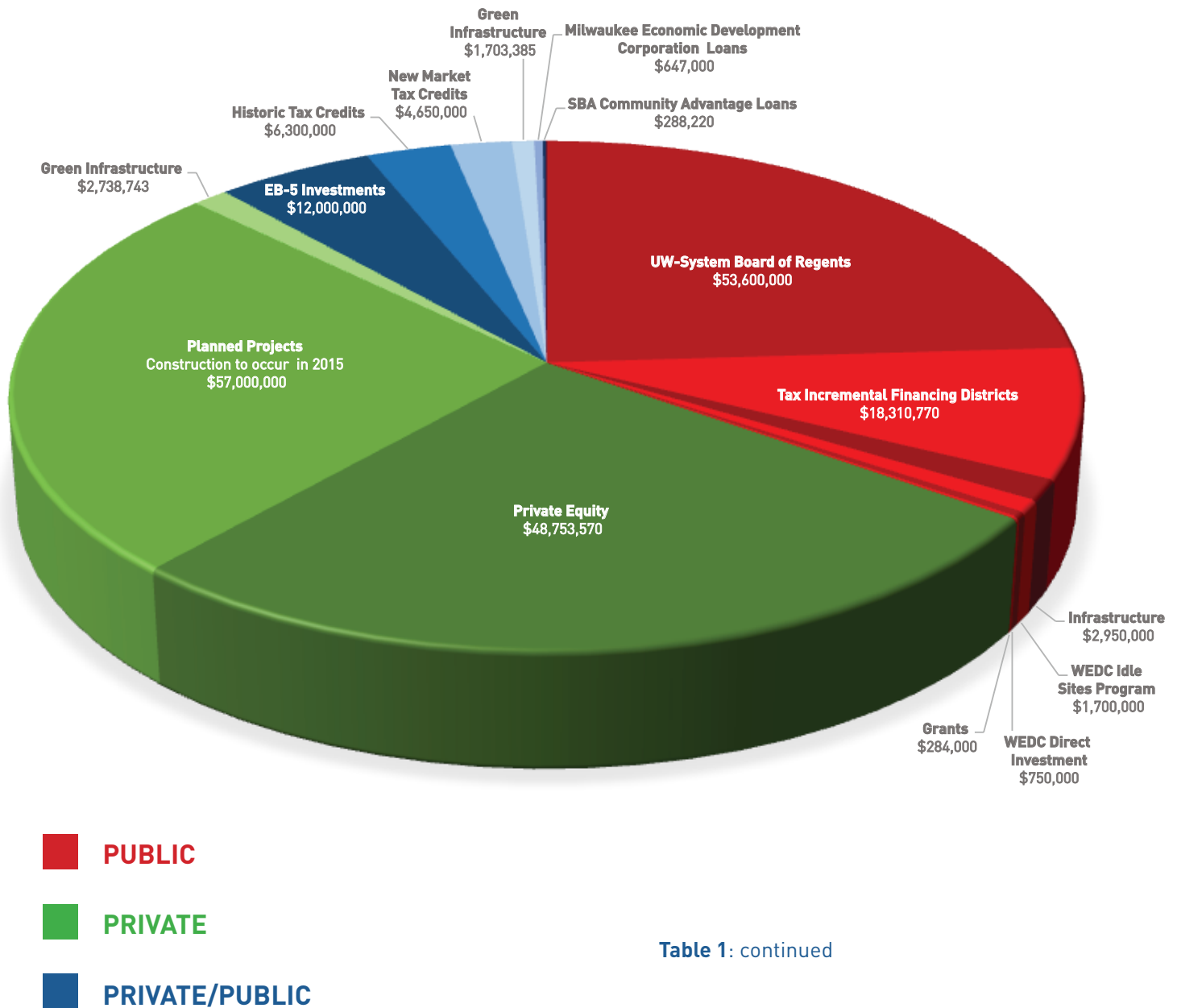


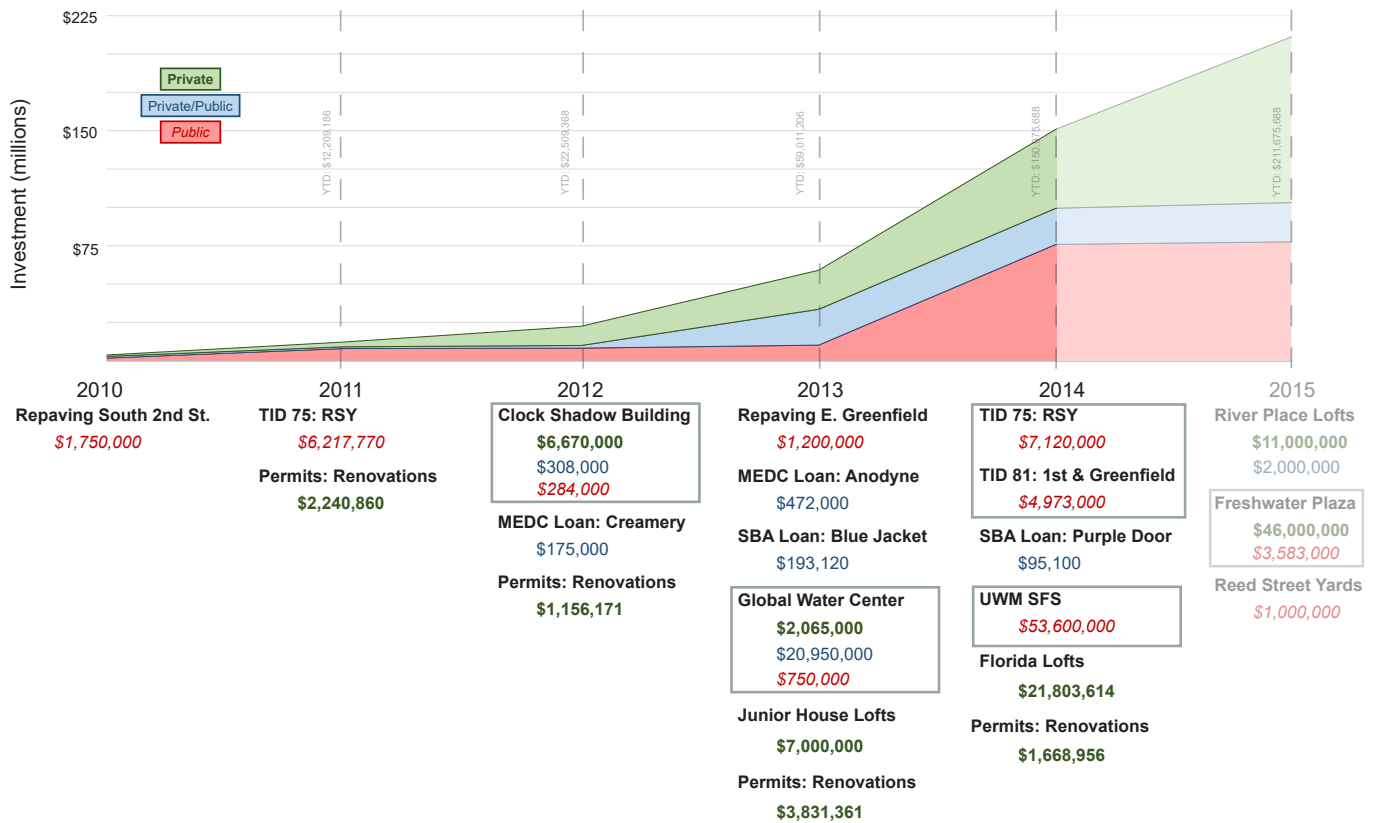
Table 1: continued

“Planned Projects” include publicly known projects through May, 2015 that will begin construction in the coming year: River Place Lofts and Freshwater Plaza. The projects are described in more detail in Table 2.

A series of public and private projects spurred further investment that reached scale in 2013. The City of Milwaukee rebuilt South 2nd Street and approved the first amendment to Reed Street Yards’ tax incremental financing district (TID). Small businesses received permits for \$3.8 million worth of renovations to existing properties and the Milwaukee Economic Development Corporation granted a loan to the Clock Shadow Creamery. By the end of 2014, a combination of infrastructure projects, additional financing for TIDs, and residential property developments increased the year-to-date investment total to \$150.9 million.

CUMULATIVE INVESTMENT

2010-2014 Water Technology District, Walker's Point Neighborhood



NOTE: Project costs were broken down using information obtained from public sources and information requests. If a project does not contain an amount for public or private funding, that information was not publicly available.

Figure 2: Public and private investors infused over \$211.6 million into The District with the majority of funding beginning in 2013.

PRIVATE PROJECTS

Private developments used a mix of private and public funds to secure financing, build new construction, and renovate existing buildings. In total, major developments—those that were frequently recognized in local media—generated \$116.8 million in construction projects. This total also contains a mix of public funding that facilitated the projects. The type of large-scale projects that catalyzed a higher volume of development in the neighborhood began in 2012 with the \$7 million Clock Shadow Building (see case study on p. 26). In subsequent years, the scale of investment in projects increased greatly.

Table 2: Notable Developments, 2010-2015*

Development	Location	Cost	Year
Clock Shadow Building	138 West Bruce Street	\$7,000,000	2012
Junior House Lofts	710 South 3rd Street	\$7,000,000	2013
River Place Lofts	Former tannery at terminus of West Freshwater Way along Menominee River	\$13,000,000 (Building 1) (projected cost)	2015
Florida Lofts	408 West Florida Street	\$21,803,614	2014
Global Water Center	247 West Freshwater Way	\$22,000,000	2013
Freshwater Plaza	South 1st Street and East Greenfield Avenue	\$46,000,000 (projected cost)	2015
Total		\$116,803,614	

* Sources: Amounts were collected from local media reports, information self-reported by organizations that conducted the development, and research documents. Specific sources included articles in the Milwaukee Journal Sentinel, Milwaukee Business Journal, and the Historic Preservation Institute within the School of Architecture and Urban Planning at the University of Wisconsin-Milwaukee.

Magnitude of Real Estate Investment

Study Area, 2010-2015

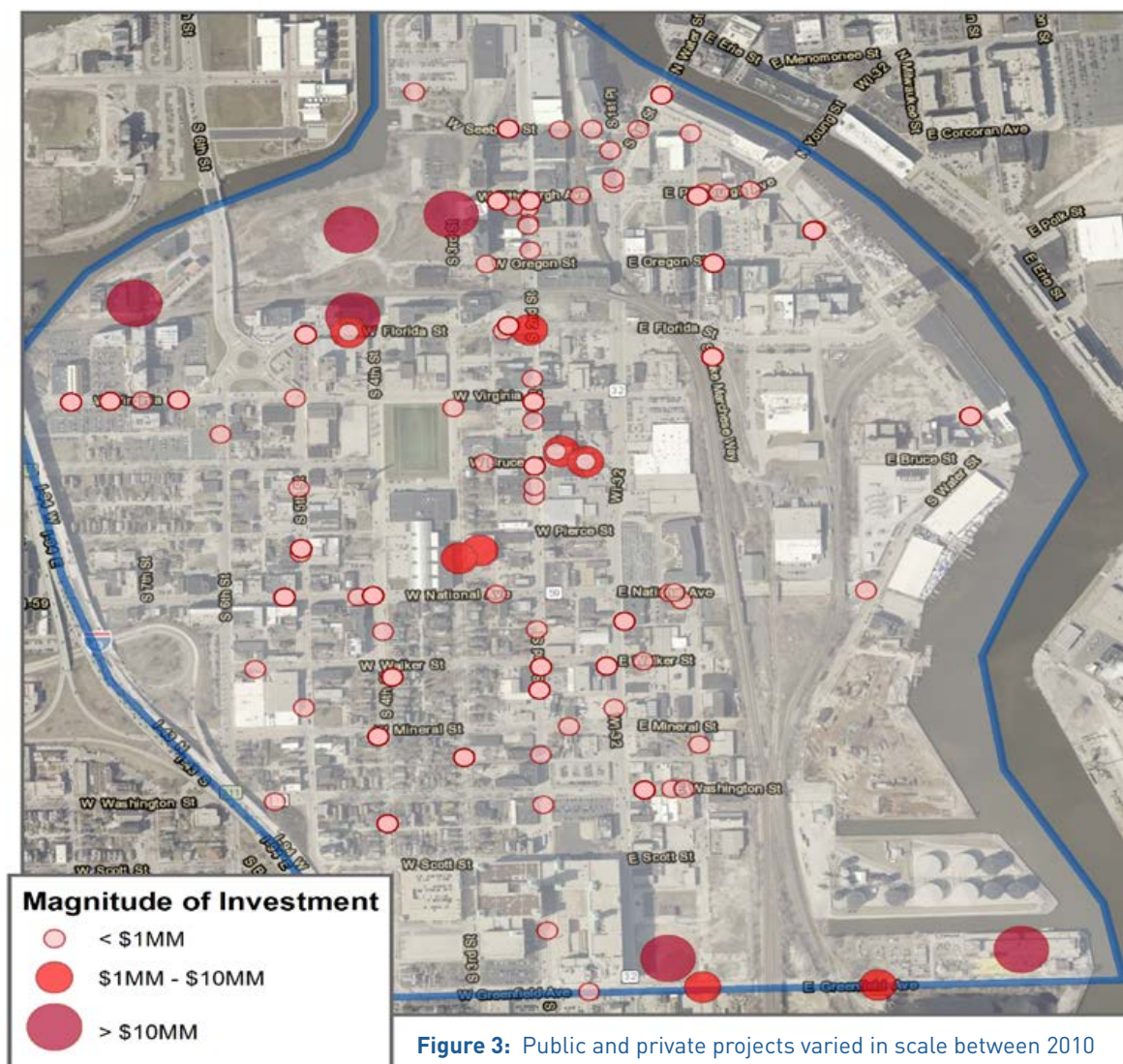


Figure 3: Public and private projects varied in scale between 2010 and 2015. The majority of projects can be attributed to small-scale investment, while a series of projects valued at more than \$1 million are noticeable.

Small-Scale Investment

Between 2011 and 2014, 109 renovations and new construction projects occurred in The District totaling \$11.2 million in investment. 2014 saw the largest number of projects at 40, with \$3.9 million invested. 2013 followed as the second most productive year with 36 projects valued at \$3.8 million.

*Table 3: Renovations and New Construction Projects**

Year	Amount	Count
2011	\$2,240,860	19
2012	\$1,156,171	14
2013	\$3,831,361	36
2014	\$3,986,564	40
Total	\$11,214,956	109

*Source: City of Milwaukee Department of City Development

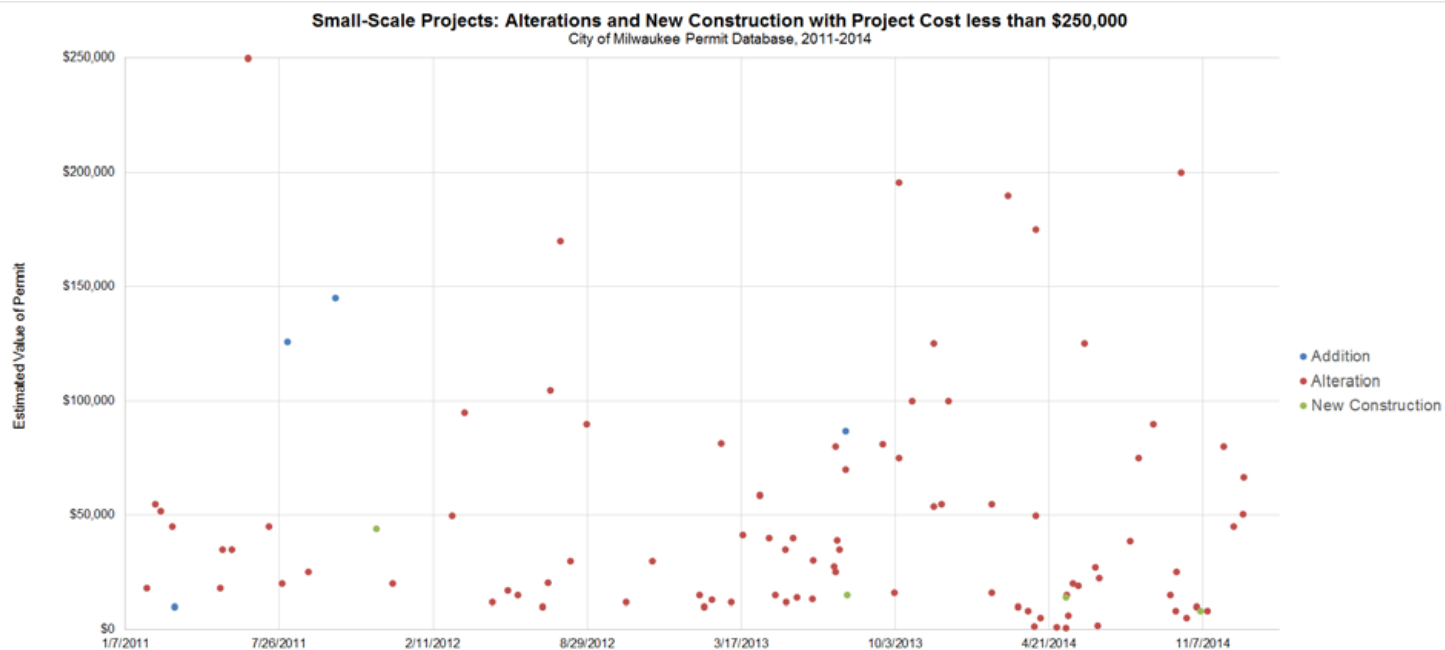


Figure 4: While small-scale construction projects varied in cost, the majority were reported at less than \$50,000.

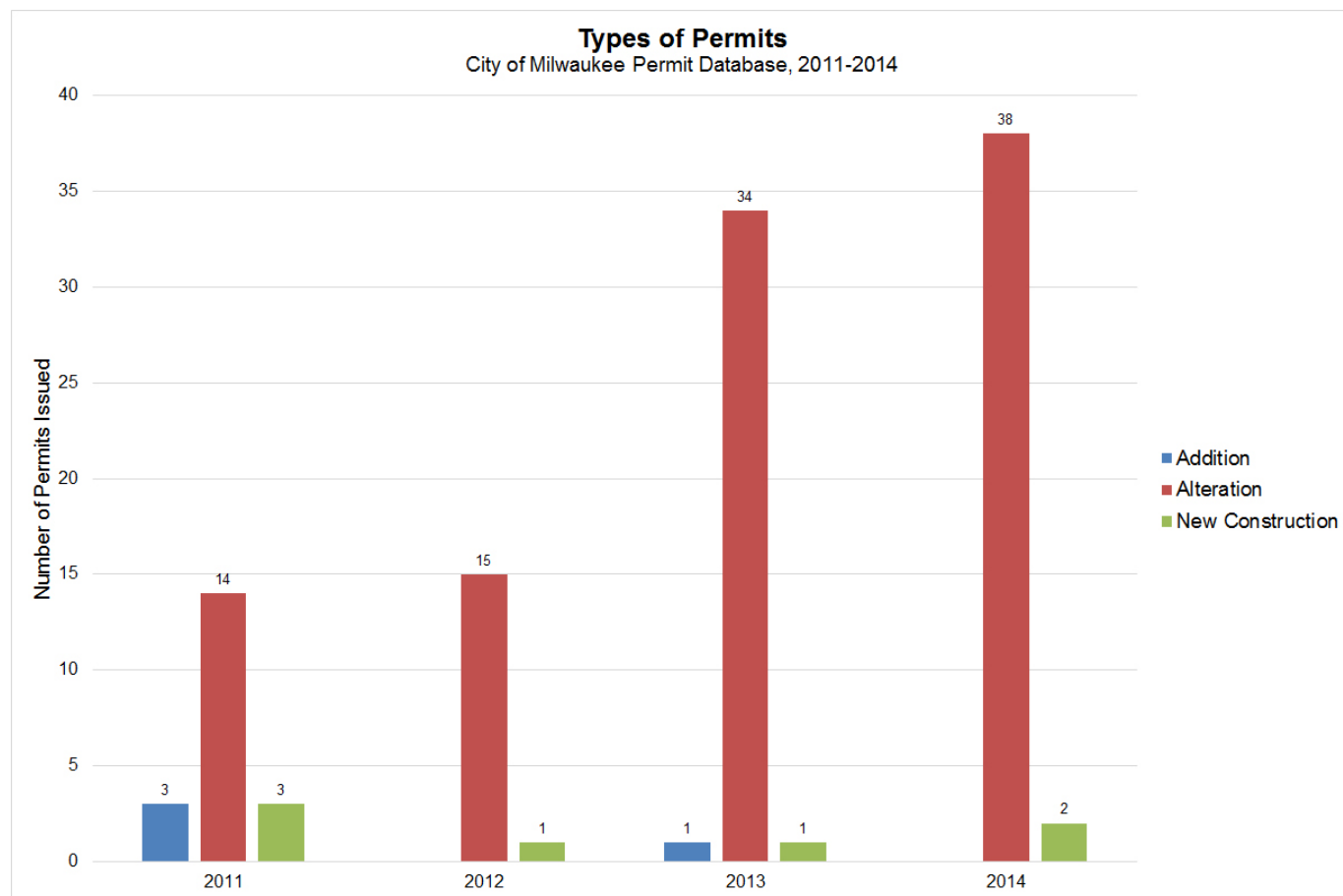


Figure 5: The number of projects in The Water Technology District steadily increased between 2011 and 2013. The number of building permits issued doubled between 2011 and 2014.

Existing Assets and External Influences

Walker's Point presented an ideal, yet unique, opportunity for urban redevelopment. A high-density built environment occupies much of the space, but many of the buildings continue to be underutilized or stand vacant. Thus, the area was susceptible to change and development. The neighborhood retained positive forces within its boundaries, as well as responded to growth, development, and stability from surrounding neighborhoods. These existing assets provided a foundation for the community's renewal, which also allowed for developments around Walker's Point to catalyze efforts in the neighborhood.

Existing Assets

Public agencies and projects, in conjunction with private companies, anchored the northern and central portions of the neighborhood.

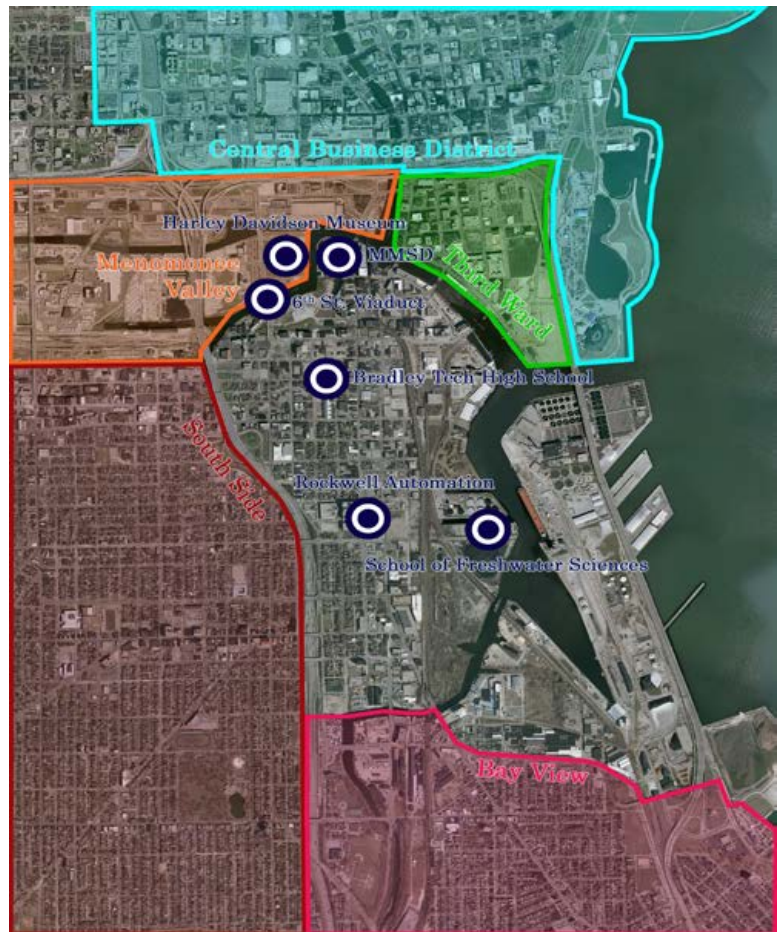


Figure 5: Walker's Point retains its own assets—like Bradley Tech and Rockwell—while simultaneously benefiting from the stability and growth of surrounding neighborhoods.

- The **6th Street Viaduct and Milwaukee Metropolitan Sewerage District's headquarters** reinforced the area and provided the framework needed to spur new development projects. The Global Water Center and Reed Street Yards now call that portion of The District home.
- **Bradley Tech High School, Rockwell Automation, and the University of Wisconsin-Milwaukee's School of Freshwater Sciences (SFS)** occupy the central portion of The District. As residential and manufacturing properties comprise the majority of this sector, these anchors helped develop a symbiotic relationship between neighborhood amenities. Bradley Tech and the SFS provide educational and employment opportunities, while the residential properties allow students, faculty, and staff to live nearby. Rockwell's headquarters serves both as an employment center and a leader in the community. The company takes an active role in the health of the community and serves as an important steward, communicator, and facilitator.

Existing Assets

Communities and developments that surround the neighborhood positively impact Walker's Point. The residents, customers, employees, and traffic attracted by these other locations funnel activity into The District. As a result, Walker's Point benefits from being completely surrounded by growing communities on land, as well as being adjacent to Lake Michigan.

- The **Central Business District** (Downtown, Financial Sector) move traffic along 1st and 2nd Streets providing a source of customers.
- The **Third Ward** and **Menominee Valley** are excellent examples of well-organized planning efforts that received significant public and private investment. The Valley is a job center, while the Third Ward supplies customers and employees.
- The **Near South Side** and **Bay View** neighborhoods help anchor the social and cultural aspects of the neighborhoods. Both have a strong community with rich heritage. As large residential districts, they also provide stability. Community-based organizations, like Layton Boulevard West Neighbors and 16th Street Community Health Center, provide much-needed services and help to strengthen the community.

PUBLIC PROJECTS

Tax Incremental Financing Districts (TID) and Infrastructure Projects

The City of Milwaukee invested \$21 million in infrastructure and economic development efforts within The District since 2010. Specifically, the projects have included funds for repaving roads, renovating or constructing water and electrical infrastructure, and the stimulation of catalytic economic development efforts through a public/private venture fund.

Reed Street Yards received the largest portion of city funding at over \$13 million. A smaller portion of the funds rebuilt South 2nd Street as a “complete street” and repaved East Greenfield Avenue to mark the entrance of Freshwater Plaza and funnel traffic to the School of Freshwater Sciences. The remaining funds were used to finance the TID at 1st Street and East Greenfield Avenue.

Table 4: Expenditures from TIDs and Infrastructure Investments, 2010-2014

Project	Location	Cost	Year
South 2nd Street	National Avenue to Menominee River	\$1,750,000 (paving)	2010
East Greenfield Avenue (in conjunction with development at School of Freshwater Sciences)	First Street to terminus at Kinnickinnic River	\$1,200,000 Paving: \$800,000 Porous paving and drainage facilities: \$400,000	2013
TID 75 – Reed Street Yards Includes: West Freshwater Way and West Florida Street	Reed Street Yards, West Freshwater Way, West Florida Street	Total: \$13,337,770 Phase I: \$6,217,770 (2011) Phase II: \$7,120,000 (2014) (authorized expenditures, excluding interest)	2011, 2014 (District created)
TID 81 – 1st and Greenfield	Freshwater Plaza at northeast corner of South 1st Street and East Greenfield Avenue (7-acre site)	\$4,973,000 (authorized expenditure, excluding interest)	2014 (District created)
Total		\$21,260,770	

Source: City of Milwaukee Department of Public Works, Amendments 1 and 2 to TID 75 – Reed Street Yards (Comptroller Reviews from Common Council File Numbers 090688 and 140453), City of Milwaukee Department of City Development “2014 Annual Report of Milwaukee’s Tax Incremental Financing Districts” and accompanying individual district reports.

Small Business Loans Approved through Milwaukee Economic Development Corporation

Between 2012 and 2014, the Milwaukee Economic Development Corporation (MEDC) awarded \$935,220 worth of small business loans in the neighborhood. Two of the loans originated with MEDC, while the others were Small Business Administration Community Advantage Loans. Borrowers included neighborhood food establishments: the Clock Shadow Creamery, Anodyne Coffee Roasting Co., Blue Jacket, and Purple Door Ice Cream.

Table 5: Investments Made in Walker's Point Businesses through Milwaukee Economic Development Corporation.

Company	Type of Funding	Amount of Funding	Use of Funds	Year
Clock Shadow Creamery LLC	MEDC Loan	\$175,000	Purchase equipment	2012
Anodyne Coffee Roasting Co.	MEDC Loan	\$472,000	Real estate purchase and renovation	2013
Blue Jacket LLC	SBA Community Advantage Loan	\$193,120	Real estate purchase and renovation	2013
The Purple Door Ice Cream Shoppe LLC	SBA Community Advantage Loan	\$95,100	Equipment purchase and tenant improvements	2014
Total		\$935,220		

Source: Milwaukee Economic Development Corporation Annual Reports for 2012, 2013, and 2014

Property Values

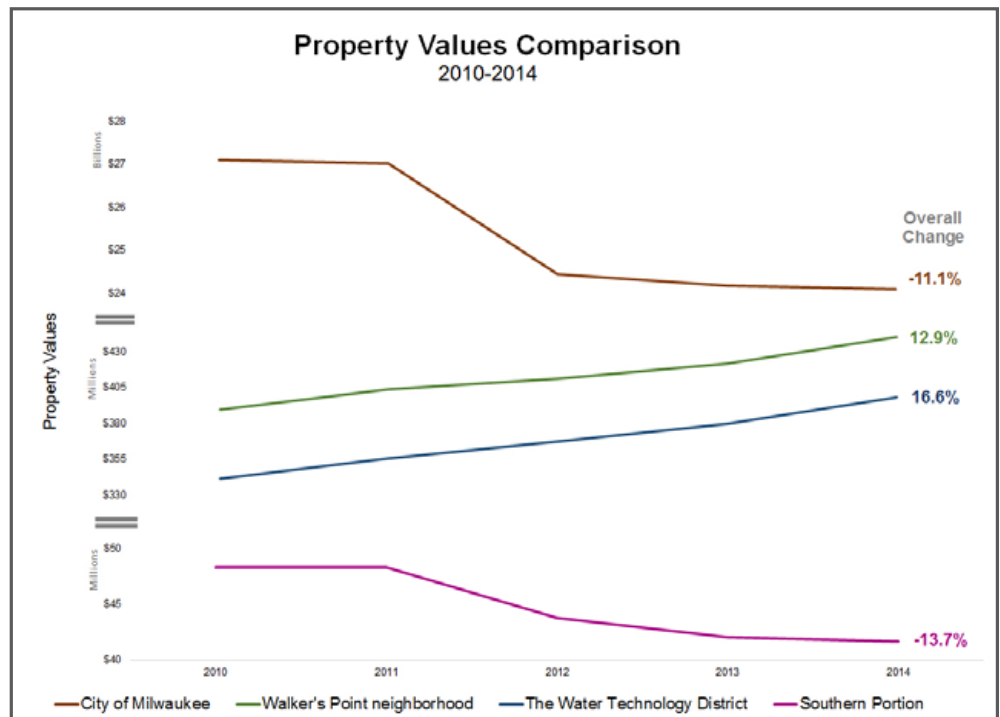
Property values in The Water Technology District increased by \$56 million between 2010 and 2014. This 16.6 percent increase surpassed the gains made by Walker's Point as a whole at \$50 million. These increases contrast the City of Milwaukee's total property value loss of 11.1 percent and the 13.7 percent decrease in the largely residential southern portion of Walker's Point during the same time period.

Table 6: Changes in Assessed Property Values, City of Milwaukee

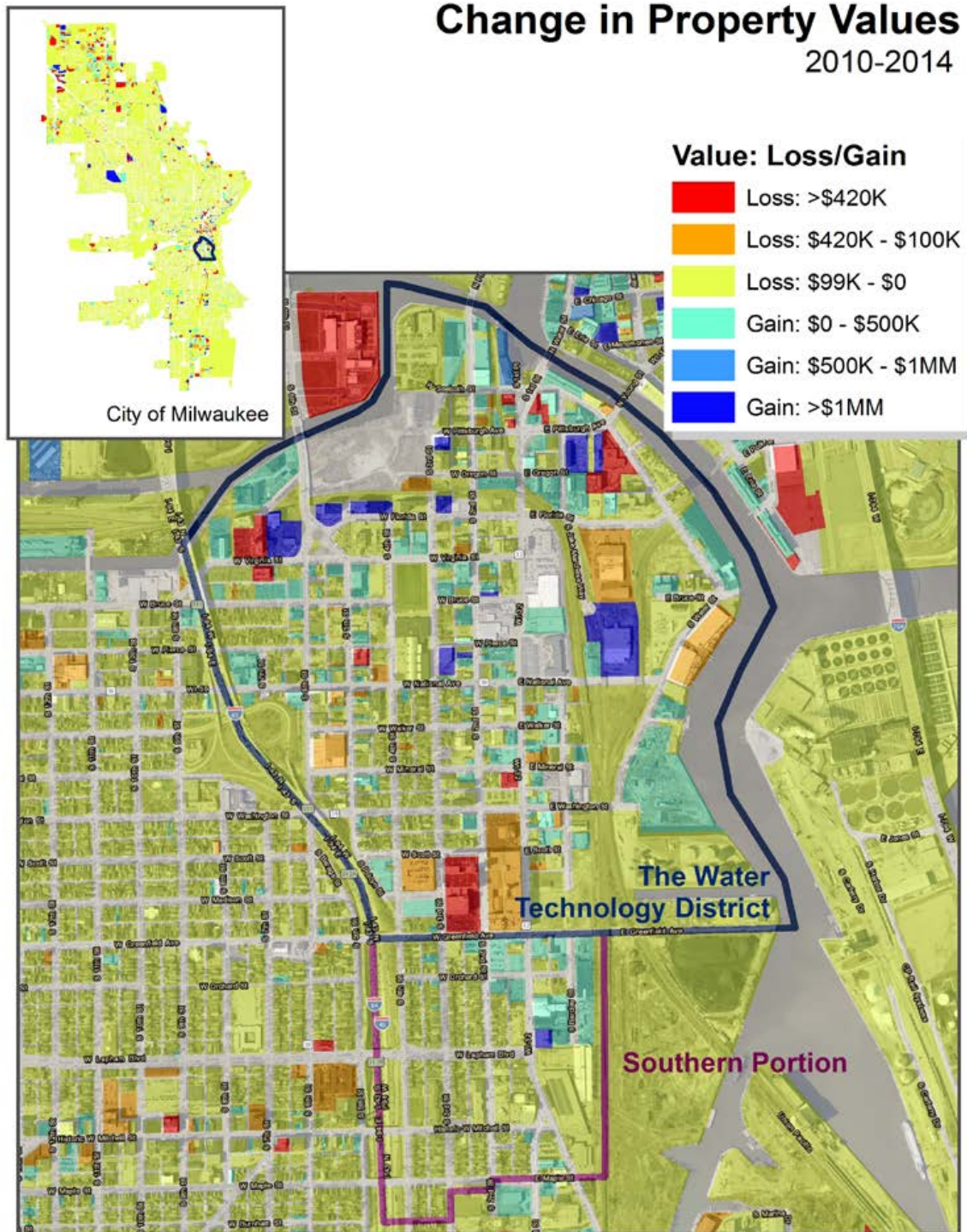
	2010	2014	2010-2014	
	Total Value	Total Value	Value Change	% Change
City	\$27,091,119,720	\$24,084,276,205	-\$3,006,843,515	-11.10%
Walker's Point neighborhood	\$389,654,875	\$439,726,775	\$50,071,900	12.85%
The Water Technology District	\$341,367,175	\$398,057,475	\$56,690,300	16.61%
Southern portion of neighborhood	\$48,287,700	\$41,669,300	-\$6,618,400	-13.71%

Source: City of Milwaukee Assessment Commissioner Report (December 2014) and Master Property File

Figure 5: The Water Technology District saw numerous gains in property values with development along South First and Second Streets, as well as major gains in new residential real estate projects.



Change in Property Values 2010-2014



Green Infrastructure

As neighborhood companies and organizations renovated or constructed spaces in the past six years, plans incorporated green infrastructure installations promoting low impact development. Twelve installations cover 197,731 square feet in the district.

Of the various types of installations in the district, green roofs predominate with eight being installed thus far. Their total area amounts to 72,531 square feet; in other terms, green roofs cover 1.66 acres in the district.

Rockwell Automation boasts the largest at its headquarters on South 2nd Street. Over one acre of its roof serves as a rain catchment. Other installations can be found at 88Nine Radio Milwaukee, the Global Water Center, Milwaukee Metropolitan Sewerage District's headquarters, UWM's School of Freshwater Sciences, and the Clock Shadow Building.

In addition, the Milwaukee Metropolitan Sewerage District partners with private property owners to help finance green infrastructure projects. Since 2010, their partnerships have resulted in \$4 million in public/private money developing green roofs, green infrastructure, and green streets.

Table 7: Public/Private Green Infrastructure Investments, 2010-2014

	2010	2012	2013	2014	Total
Private Funds	\$873,056	\$1,589,266	\$28,257	\$248,164	\$2,738,743
Public Funds	\$1,127,500	\$117,745	\$12,100	\$138,040	\$1,395,385
				Total	\$4,134,128

Table 8: Green Infrastructure Installations

Type	Name	Address	Size (sq. ft.)	Capture Volume (gal.)
Bioretention	The Beam House	600 Freshwater Way	5,000	15,000
Bioswale	Reed Street Yards	Freshwater Way (3rd Street to 6th Street)	2,200	16,500
Green Roof	88Nine Radio Milwaukee	220 East Pittsburgh Avenue	2,422	2,422
Green Roof	Rockwell Automation	1201 South 2nd Street	48,500	48,500
Green Roof	UWM GLWI/SFS	600 East Greenfield Avenue	7,600	7,600
Green Roof	MMSD	260 West Seeboth Street	3,400	3,400
Green Roof	Fix Development, LLC (2 roofs)	255 West Bruce Street	5,520	5,520
Green Roof	Braise	1101 South 2nd Street	1,750	1,750
Green Roof	Global Water Center	247 Freshwater Way	3,339	3,339
Greenway	Reed Street Yards	2nd Street and Freshwater Way	108,000	64,800
Porous Paving	Reed Street Yards (estimated)	Freshwater Way (3rd Street to 6th Street)	10,000	30,000
			Total	197,731
				198,831

* Capture volumes are based on engineering specifications (where available) or estimates provided by the Milwaukee Metropolitan Sewerage District in the Regional Green Infrastructure Plan (Table 3, pp. 30).

Source: City of Milwaukee Office of Environmental Sustainability's Green Infrastructure Baseline Inventory (April 2015)

Brownfield Remediation

Since 2012, public agencies have invested \$4.5 million in brownfield remediation projects. The investments have occurred at three of the neighborhood's largest projects in the study time period: the Clock Shadow Building, Reed Street Yards, and Freshwater Plaza. Freshwater Plaza received the most funding at \$3.5 million.

Table 9: Brownfield Remediation Costs

Location	Size	Amount of Funding	Funding Source	Year
Clock Shadow Building	4,000 sq. ft.	\$200,000	Wisconsin Department of Commerce	2012
Reed Street Yards	17 acres	\$774,000	City of Milwaukee	2012-2013
Freshwater Plaza	7 acres	\$2,883,000	City of Milwaukee	2015
Freshwater Plaza	7 acres	\$700,000	Wisconsin Economic Development Corporation	2015
Total		\$4,557,000		

Source: City of Milwaukee Department of City Development, WEDC, private developer

- \$23 million building supported by \$12 million of EB-5 investor money, \$4.65 million in New Market Tax Credits, \$4.3 million in Historic Tax Credits, and a \$750,000 grant from WEDC.
- 98,000-square-foot, seven-story, LEED Silver water research and business accelerator center that is unprecedented as it unites business of all sizes, government and non-government organizations, and multiple research universities under the umbrella of a single vertical industry.
- Features 44-person lecture hall, state-of-the-art water flow lab, and board room with global video conferencing technology
- Home to The BREW: a mentor-driven seed accelerator for start-ups
- Location of the North American office of The Alliance for Water Stewardship and Center of Excellence for Freshwater Innovation and Small Business Development, through the support of the U.S. Small Business Administration as a Regional Innovation Cluster



Overview

Wisconsin is home to two hundred water technology companies, with more than 150 companies in the southeast Wisconsin region alone. The Global Water Center serves as one of Milwaukee's principal catalysts for The Water Technology District, spurring investment of over \$211 million dollars. To elevate the city as the World Water Hub, The Water Council and its partners created this water research and business accelerator to convene the water industry's promising talent in academia, business, and policy. Adjacent to Reed Street Yards—the Global Water Technology Business Park—the center provides these companies and the world with a place to collaborate, exchange ideas, and bring new policies and technology to the market in a LEED Silver certified building. This work is addressing the most pressing challenges related to water quality, technology, and policy.

Key Features

The Water Council worked with numerous public and private partners to bring the project to fruition. Its ongoing programs and initiatives continue to be examples of effective cross-sectoral relationships strengthening the water cluster and the region's economy. The center fulfills its mission to be a collective of like-minded professionals addressing the world's water challenges through public/private cooperation, offering opportunities to exchange ideas, promoting and supporting entrepreneurship, and attracting the offices and efforts of national and international agencies.

Private/public funding secured financing – Funding for the center’s \$23 million cost was made possible through partnerships with private investors, the Wisconsin Economic Development Corporation (WEDC), the Wisconsin Housing and Economic Development Authority (WHEDA), and the EB-5 Immigrant Investor program. Financing included \$12 million of EB-5 investor money, \$4.65 million of New Market Tax Credits, \$4.3 million of Historic Tax Credits, a \$750,000 grant from WEDC, and \$2 million of private equity.

Common areas and facilities foster collaboration – Residing in a seven-story former warehouse with 98,000 square feet of Class A office space, the center provides a host of amenities and opportunities to share work and hold discussions: a café and common sitting area, 44-person lecture hall, exhibition space for new prototypes, state-of-the-art water flow lab, and a board room with global video conferencing technology.

The BREW (Business. Research. Entrepreneurship. In Wisconsin.) percolates start-ups – Founded by The Water Council and WEDC, and located in the Global Water Center, the BREW is a mentor-driven seed accelerator that incubates start-up companies focused on addressing freshwater challenges. Using a three-pronged philosophy to bring viable solutions to market, the program bolsters the start-up process through regular trainings, expands the start-ups’ network with linkages to the larger water industry network, and provides affordable office space in the Global Water Center. WEDC funding continues to support the BREW through working grants.

World Water Hub earns recognition and forms new partnerships – As The Water Council has expanded its efforts, the Global Water Center has become one of its many symbols of success. As a result, the center has become the home of a Regional Innovation Cluster with the U.S. Small Business Administration (SBA) and the North American office of The Alliance for Water Stewardship. Using the SBA’s contract, The Water Council has established a Center of Excellence for Freshwater Innovation and Small Business Development in the Global Water Center.

Best Practices

Coordinated efforts create an urban micro-neighborhood focused on water technology – The Global Water Center and Reed Street Yards create a hyper-focused district dedicated solely to the water industry; the agglomerative forces are magnetic and draw water professionals from various parts of the globe. The power of the center rests not only in its facilities, but also in the various stakeholder groups that have committed themselves to and actively participate in efforts. The growth of the partners’ network stimulates ideas and ensures the commercialization process reaches a critical mass far more quickly.

Focus on start-ups supports the entrepreneurial community – The BREW and the SBA’s designation as a Regional Innovation Cluster demonstrate The Water Council’s commitment to entrepreneurship and small business development. The Global Water Center provides the ideal environment where water start-ups and established water companies can work together and share resources. The additional technical facilities—flow lab, conference room, and lecture hall—allow the entrepreneurs to bring products to market more quickly and easily communicate their ideas to the world.

Building a vertical industry research and business accelerator – The Global Water Center is an unparalleled facility as it has brought under one roof government, business, and academic partners that are focused on water technology research and commercialization. This Private-Public Partnership has become an international model for an approach that cultivates cooperation and collaboration within a building and well outside its walls. The Center itself is a physical representation of the Milwaukee community coming together and working collectively.



- Mixed-use, four-story, 28,000-square-foot building valued at \$7 million
- Reclaimed a 4,000-square-foot brownfield
- Co-located neighborhood services to create the Healing Collaborative
- Houses 3,000-square-foot rooftop garden and green roof that funnel excess rain water into a 5,000-gallon cistern
- Named as a 2013 Top Ten project by the American Institute of Architects' Committee on the Environment



Photo Credit: Fix Development

Overview

The developers of the Clock Shadow Building envisioned it as a statement: a statement against what is accepted as the industry standard; against unsustainable construction weak to stressors; against the status quo; in favor of vision, courage, and the belief that more can be done. Fix Development, led by Juli Kaufmann, claimed the 4,000-square-foot brownfield at the intersection of Bruce and South 2nd Streets. Using the quadruple-bottom-line approach and the tenets of the Living Build Challenge, Fix transformed the site into a mixed-use, four-story, 28,000-square-foot building. Completed in 2012, it represents a \$7 million investment in the neighborhood. The American Institute of Architects' Committee on the Environment recognized it as a Top Ten Project in 2013.

Key Features

The design team embraced the building's role in its micro-environment in the neighborhood, as well as its broader, more macro context in the region. The ambitious endeavor sought to create a building that was economically, ecologically, and socially sustainable. To emphasize economic stability, environmental stewardship, social equity, and cultural continuity, the building incorporates community resources, water and energy conservation, and health and wellness into its programming.

Integration of services created healing collaborative – To fulfill the mental, physical, and spiritual needs of community residents, tenants in the building provide a holistic suite of services. The Aurora Walker's Point Community Clinic, CORE/El Centro, and The Healing Center of Aurora Sinai Medical Center all call the Clock Shadow Building home.

Design features emphasize synergy and community – Rather than segregating tenants and customers by offices and floors, the design capitalizes on shared space and mutual exchanges. The four floors of tenants share the same conference room, while a central staircase promotes walking instead of riding the elevators. To provide financial stability, tenants were able to sign long-term leases to maintain affordability and provide cost-certain rents.

Salvaged project materials create quilted pattern – Thirty percent of the building's materials were salvaged. Cream City brick from former factories, weathered cypress from wooden pickle barrels, and scrap metal from Miller Compressing create a mosaic-like environment. History comes alive in the walls and contributes to the shared heritage of Walker's Point and highlights the materials used to build the Clock Shadow Building.

Heating/cooling system maximizes "swing" months – To reduce costs associated with climate control, energy-saving design features were incorporated to reduce energy consumption in April/May and September/October. South-facing, 10-foot by 10-foot windows provide ample sunlight and solar heat gain; operable windows provide for a flow of fresh air; and, a deep-well geothermal heating and cooling system provides a sustainable source of energy.

Rooftop garden and cistern manage storm water run-off – A shared, 3,000-square-foot urban garden and meditation space allow people to come together and connect with one another. The green roof covers 50 percent of the roof and funnels rainwater into a 5,000-gallon cistern. The garden and cistern form the first stages of the building's grey-water flushing system. The building received the first permit in the City of Milwaukee's history for the use of grey water in the flushing of toilets and urinals in a commercial building.

Best Practices

Vision for the project and commitment to the process yield a quality building – Because the Clock Shadow Building adopted such demanding requirements in the design and construction processes, it required a dedicated team of professionals to accomplish the task. The building's salvaged materials necessitated a different material procurement model that simultaneously fulfilled the building's sustainability goals while also following the construction schedule. The project's short- and long-term financial models provide for a return on investment within a reasonable amount of time, while also securing affordable rents for tenants. The building's accomplishments have been widely recognized by the Wisconsin Green Building Alliance, LISC Milwaukee's MANDI Awards, Milwaukee Business Journal, and the American Institute of Architects.

Well-rounded, holistic project fills void within the community – The building's contribution to the community manifests itself physically through its tenants and their services, but it is also apparent in the communal gathering place it provides. A former brownfield was cleaned and rejuvenated; residents have a safe and beautiful space where they can access valuable services and socialize; water and energy are conserved through sustainable practices; and, the building's design provides ample sunlight and fresh air.

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CASE STUDIES THE GLOBAL WATER TECHNOLOGY PARK

Reed Street Yards

- Water technology business park on a 17-acre site with 1,000 feet of waterfront that became a showcase for green infrastructure and sustainable site design
- Upon full build-out, will house 1,000,000 square feet of mixed-use office, educational, research, and technology tenants
- Received \$13.3 million of City of Milwaukee money through a tax incremental financing district
- First building, Water Tech One, is pre-certified LEED Platinum



Rendering: Kahler Slater



Photo Credit
General Capital

Overview

Imagined during the initial development of The Water Council, Reed Street Yards became the physical manifestation of Milwaukee's international water cluster. Conveniently located on 1,000 feet of waterfront at the confluence of the Milwaukee and Menominee Rivers, this water industrial park occupies 17 acres of a former trucking depot. Through public-private cooperation, the site became a vision and showcase for green infrastructure and sustainable site design; a tax incremental financing district and development incentive zone helped guide its development. Upon full build-out, the park will house a more than 1,000,000-square-foot, mixed-use urban office, educational, research, and technology zone.

Key Features

The park's development and design embrace its iconic location. Through its commitment as a public demonstration of water technology, it boasts key sustainable features in its building process, public areas, and cooperation with the public sector.

Exposition of water technologies and management practices – The site design incorporated valuable open and public space to display leading water management practices. Buildings will have access to a purple pipe system for water recycling; bioswales and permeable paving capture storm water run-off along the street; and, a water feature cleans canal water using a Watertronics Portable Ultra-Filtration unit.

Catalytic project in a tax incremental financing district (TID) – The City of Milwaukee facilitated the creation of the park with a TID valued at \$13.3 million. As a catalytic project in the city's Near South Side Plan, the investment provided for brownfield remediation, infrastructure construction, dock wall rehabilitation, and a public-private venture fund.

Commitment to sustainable construction at Water Tech One – The site's first building, Water Tech One, is a pre-certified LEED Platinum building with the U.S. Green Building Council. Water Tech One offers four floors of Class A office space with a total building size of 80,000 square feet. Its target users include members of the business and academic water community: research and development, laboratory sciences, and business administration.

Extension of Hank Aaron State Trail – As the park lies immediately adjacent to the 6th Street Viaduct, it presented an opportunity to extend the Hank Aaron State Trail and further develop Milwaukee's RiverWalk. The trail now runs along the northern extent of the park and the Menominee Canal facing the Harley Davidson Museum.

Best Practices

Promotion of neighborhood continuity – The purposeful inclusion of an extension to the Hank Aaron State Trail, the expansion of Milwaukee's RiverWalk, and the public space and water feature at the center of Reed Street Yards created a welcome environment for neighborhood residents. Whether community members travel from the Near South Side, Bay View, or Walker's Point itself, they now have another common area to relax and socialize, enjoy nature, and share ideas.

Public funds facilitated private investment – The Reed Street Yards TID was instrumental in securing future development at the site. While private sector partners could secure the necessary financial resources to pursue further construction and development, the brownfield remediation and infrastructure costs proved to be too burdensome. The public-private collaboration ensured that the development could continue and add value to the neighborhood.

Focus on sustainability – The construction of bioswales, permeable paving, and a purple pipe system contribute to the health and wellness of the community. They are a demonstration of the socially responsible practices of the developers and their recognition that sustainable features must become the professionally acceptable standard. Overall, the incorporation of these practices is a testament to a forward-looking vision for the area.

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ANALYSIS NOTES

Construction Permits: The permit value in the Department of City Development database and that reported in local media differed significantly. This can be attributed to the way in which a construction permit fee is calculated. Certain development and construction costs are omitted from the calculation. While this does mean that the cost estimates in the database are less than the actual total cost, they are the most available proxy.

Business Licenses and Permits: The analysis attempted to use the issuance of business licenses and permits as an indicator of business activity. It was determined that occupancy permits may be the best measure, but access to the database became available at the end of this analysis. Time did not permit for additional investigation.

Investment Timeline: The investment timeline provides a snapshot of investments occurring in each year of the analysis. Some of these investments do not have private, private/public, or public components. In the event a component was absent, it was not listed. Because the analysis only used publicly available data, investment amounts were only listed if they were publicly reported or obtainable through an information request. If an investment lacked a specific private, private/public, or public component, it may mean that the data was not publicly available.

Property Values: The City of Milwaukee Master Property file was used to calculate the changes in total property value for the Walker's Point neighborhood and The Water Technology District. To place these areas in the context of the city, the 2014 City Assessment Commissioner Report was used to obtain changes in property values across the city. Only real estate values were included in the calculations; personal property values were omitted.

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Economic Measures

Tabular and Spatial Data

City of Milwaukee Common Council File Numbers 090688 and 140453: Comptroller Reviews for Amendments 1 and 2 to TID 75—Reed Street Yards

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Infrastructure Improvements Database: City of Milwaukee Department of Public Works

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DP04: Selected Housing Characteristics

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