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## The Water Council

Milwaukee - innovative world water hub

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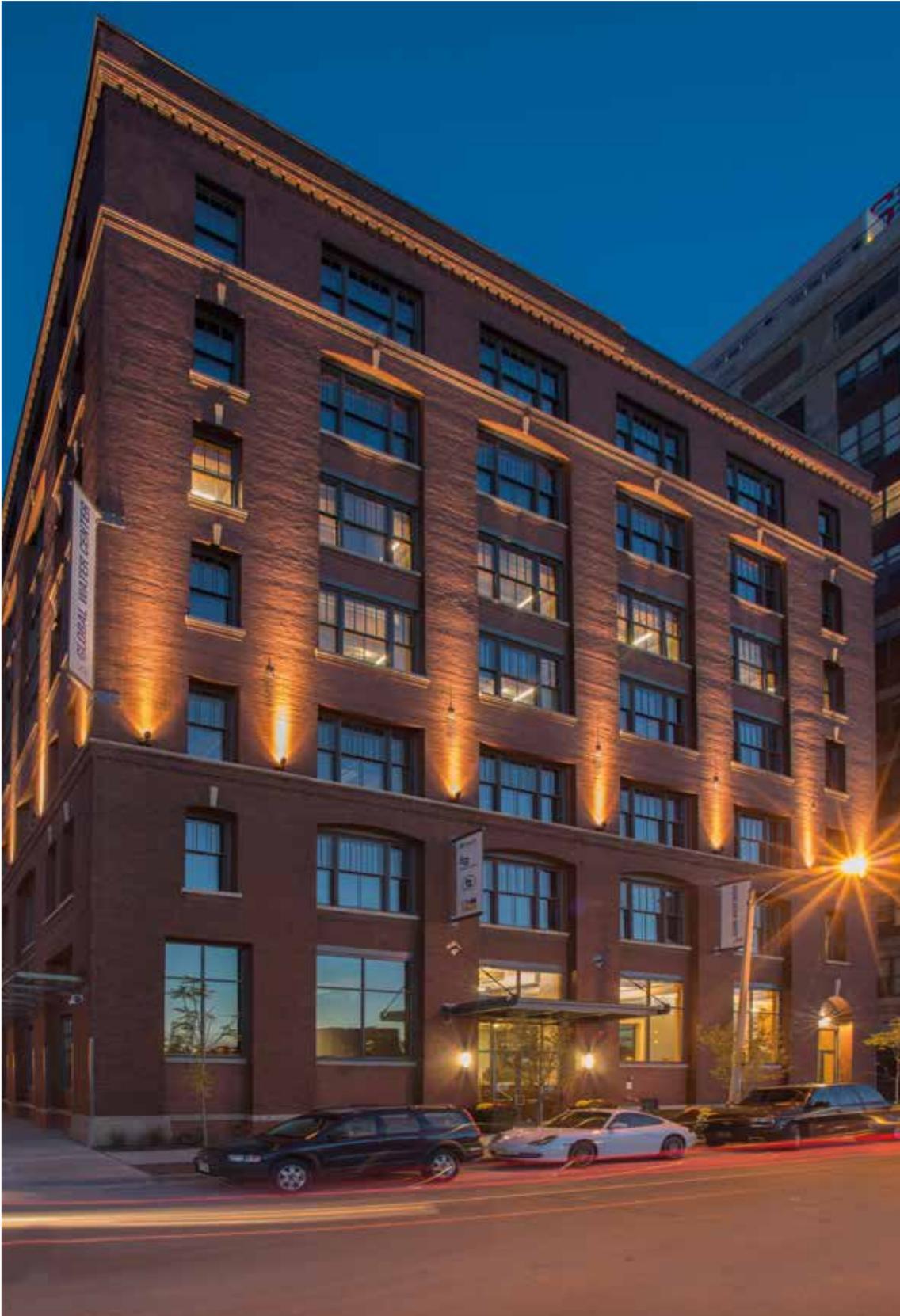


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Cover image courtesy of The Water Council.



The Global Water Centre in Milwaukee is the world's first collaborative business and academic research and commercialization facility focused on freshwater technologies. Image: The Water Council.



Milwaukee, USA



## Milwaukee – innovative world water hub

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As the City of Milwaukee, Wisconsin, USA, celebrates its fifth anniversary as an Innovating City with the Global Compact Cities Programme, The Water Council reflects on its achievements, challenges and lessons learned, from its beginnings as an economic development initiative to its current position of World Water Hub.

Milwaukee’s abundant freshwater resources afford the City of Milwaukee unique privilege and great responsibility. Located along the southwestern shore of Lake Michigan at the confluence of the Milwaukee, Menomonee, and Kinnickinnic rivers, the city is naturally endowed with Earth’s most precious resource. Throughout the city’s history, local industry and residents have taken advantage of the rivers and lakes for monetary gain, drinking water and recreation. Our appreciation and recognition of this resource developed into a dangerous presumption that our community possessed an eternally available water spigot. While countries in arid regions across the globe face water crises in the truest sense of the word, Milwaukee has never run out of fresh water. We were, however, threatened with running out of *clean* fresh water.

Milwaukee’s renaissance as the World Water Hub began over a century ago. The strong river network, access to a deep-water port, available labour and a growing market attracted major industry to the region (Romell 2013). The small companies that emerged in the first decades of the 20th century developed into today’s major industry leaders – most notably, A. O. Smith Corporation, Badger Meter, and MillerCoors’ umbrella of brands. The city’s period of prosperity shuddered in the 1960s as many Midwestern American cities suffered from massive de-industrialization, including a broad decline in manufacturing jobs that shifted to southern locations in the United States and overseas (Kanter & Bird 2013).

Economic development efforts shifted focus as the period of prosperity declined. In contrast to a previous era when Milwaukee touted its industrial strength, the 1970s saw leaders and businesses trying to preserve remaining jobs while simultaneously innovating to create new ones. It quickly became apparent, however, that jobs were not the only concern. While Milwaukee’s ‘wet’ industries had thrived for over half a century, its wastewater management practices were irresponsible

and misinformed, resulting in the heavy pollution of the city’s waterways. Indicating Milwaukee was not alone, the United States Congress passed the *Clean Water Act* of 1972 to address water pollution nationwide. The Act established specific regulations governing the discharge of pollutants into waterways and the monitoring of water quality in surface water resources (US EPA 2013). In response, Milwaukee businesses abandoned their previous roles as mere water users and innovated to become water technology companies that used their new expertise in efficient water management to grow and thrive. The city not only began to see a resurgence in the strength of its business sector, it also saw new opportunities being created.

As in other world communities, new technologies, shifting business influence and urban demographic changes forced Milwaukee and Southeastern Wisconsin to reevaluate the region’s move into the 21st century. Milwaukee leaders knew the area needed a distinct advantage if it was to remain an influential urban centre on the Lake Michigan shore. While water had always been a key component of the region’s cultural identity, the unified scope and power of water technology companies in Southeastern Wisconsin had yet to be realized.

### Developing a water industry cluster

In early 2007, the Milwaukee 7, a Southeastern Wisconsin business consortium, began an in-depth study of potential economic development opportunities. The group discovered not only a high concentration of successful and prominent water technology companies, but also the Great Lakes WATER Institute – a water research facility of the University of Wisconsin-Milwaukee. This discovery demonstrated the presence of a strong industrial water sector and supporting research capabilities to produce new technologies.

In spring that year, Paul Jones, Chairman and CEO of A.O. Smith Corporation (water heating equipment), and Rich

Meeusen, President, CEO and Chairman of Badger Meter Inc. (liquid flow measurement and control technologies), met to discuss collaborative business opportunities. On a tour of A. O. Smith's innovation laboratory, Meeusen commented on the business power the region could potentially leverage if its water companies worked to strengthen the water industry cluster. Jones agreed and the two CEOs approached Julia Taylor, President of the Greater Milwaukee Committee (GMC) – a key leader in the Milwaukee 7 economic development effort who had already started building the water technology industry under the Milwaukee 7 banner – to see how the GMC could help advance their efforts. The two parallel initiatives combined their work and what is now called The Water Council was formed.

In an effort to confirm the water industry cluster, business leaders called upon Professor Sammis White, a professor of urban planning at the University of Wisconsin-Milwaukee and an economic development scholar, to research the region and determine the feasibility of pursuing an economic development campaign in water. With a team of graduate students, Professor White produced a regional analysis indicating that Southeastern Wisconsin had great potential to gain a foothold in the water market.

In July 2007 the first Water Summit was convened at Discovery World on the Lake Michigan shore. Sixty individuals of various backgrounds attended – fulfilling the initial open, participatory forum envisioned by the organizers (Kanter & Bird 2013). Attendees from government, business, and education quickly recognized the potential of Milwaukee as a water industry cluster and

began work to make it a reality. Major business executives devoted portions of their daily activities to developing the idea, while the Greater Milwaukee Committee and the not-for-profit Spirit of Milwaukee donated office space and permanent staff. The Water Council has a mission of economic development, the creation of a talent pipeline and the development of new technologies to make Milwaukee the Silicon Valley of water.

As key stakeholders prepared for the second Water Summit in July 2008, they reflected on recent activities and asked, "Do we *really* have what it takes? Or, did we *think* we had it?" Professor White conducted additional research in support of the initial 2007 discovery and answered the former question with a resounding "Yes!" There was a caveat, though. While it was clear Milwaukee could become both a regional and national centre for water business, its prowess and legitimacy could only be ensured with decisive action from local leaders. Over 120 regional businesses had a direct interest in water, but their disparate foci and goals weakened the region's potential (White 2008). To instigate economic development, the region's water cluster needed to be strengthened and promoted with a forward thinking, unified vision and resolute determination. Professor White's 'Water Summit White Paper' proved to be an important turning point and catalyst for inspiring and accelerating the development of The Water Council: "The speed of development that is needed will not come from small amounts of money. The region needs all the public and private support that it can possibly muster to become a true global leader. The region and its supporters must place a large bet on the water industry, beginning now" (ibid).



The first floor of the Global Water Centre in Milwaukee features a state-of-the-art Flow Lab, providing tenants with the ability to conduct highly accurate testing of water samples in real-time. Image: The Water Council.

### **Innovating to become a world water leader**

With definitive proof of Milwaukee's regional assets, participants left the second Water Summit confident in the region's potential. Julia Taylor and Dean Amhaus, then-President of the Spirit of Milwaukee, travelled to China in late 2007 on unrelated business to the water technology cluster. While there they learned of the Global Compact Cities Programme by a chance meeting in Beijing with Fred Dubee, a Senior Advisor to the UN Secretary-General. They recognized the significance that the designation could have on Milwaukee's ambition to become a world water leader. Water Council leaders began discussions with the Cities Programme and in April 2009 Milwaukee received its designation as an 'Innovating City'.

Because water is a multi-faceted and complex industry and issue, Milwaukee leaders decided to pursue various initiatives within the Cities Programme. Regional water companies in cooperation with the City of Milwaukee work to strengthen and promote aquaculture, reduce phosphorous in regional water sources, reduce pollutants in storm water runoff, improve wastewater treatment, assist municipalities to adopt new water technologies, manage the quality of drinking water supply and integrate multiple technologies to solve complex water problems.

Milwaukee's comprehensive water industry goals and new international prowess have legitimized its efforts. In the past four years, the City of Milwaukee and Water Council have received a massive influx of human and financial capital. Dean Amhaus became the President and CEO of The Water Council in 2010 and immediately implemented his unique guerilla-style marketing tactics to raise awareness about Milwaukee's water culture and current efforts. Community and business leaders invested unquantifiable amounts of money and time to strengthen business practices, develop and promote The Water Council and grow the culture of water in the region.

### **Fostering talent through education**

The future success of Southeastern Wisconsin's water industry depends on its current strength and the growth of water culture in the community. The Water Council, in cooperation with local universities and technical schools, conducts outreach programs to ensure that 100 per cent of students in the community look to the water industry as a viable, strong career path. Students of all ages lie at the centre of activities to promote water education programs, internship opportunities and career offerings. The region's talent development network grows stronger each day as water education is infused in curricula and programs around the community.

In September 2010, the University of Wisconsin-Milwaukee opened the School of Freshwater Sciences – the only graduate school of its kind in the United States to specialize in fresh water. In addition, over \$US2 million was granted in 2010 through the United States National Science Foundation and Milwaukee businesses to establish an Industry/University Cooperative Research Centre (see *Milwaukee's blue revolution* on page 49).

The University of Wisconsin-Milwaukee, Marquette University and area businesses work in collaboration to conduct research and produce new technologies. The Water Council has also created a network of 20 partners in the Southeastern Wisconsin region to develop education and training programs. Over 90 internships are available and five university student chapters promote the water industry and issues on area college campuses. The programs have thus far reached over 3,000 students.

### **Aquaponics**

In 2011, IBM selected Milwaukee to participate in the Smarter Cities Challenge. A team of executives worked in the city for three weeks studying urban agriculture and concluded that unique expertise in the field and the robust water industry cluster enabled the city to influence the world food supply, act as water stewards and "become a smarter city that feeds itself" (IBM Smarter Cities Challenge 2011). Two examples of Milwaukee's thriving aquaponics movement are Growing Power and Sweet Water Foundation (see an article about this on page 111). Growing Power is an urban agriculture icon founded by Will Allen that specializes in intensive urban agriculture, small livestock production and community development programs.

### **Establishing a physical hub**

On 12 September 2013, Milwaukee celebrated a milestone with the opening of the Global Water Center and launch of The Brew. Located along the banks of the Menomonee River, the Global Water Center is the world's first collaborative business and academic research and commercialization facility focused on freshwater technologies. Housed in a rehabilitated seven-storey, 98,000-square-foot (9km<sup>2</sup>) factory, The Water Council now runs the World Water Hub from the heart of Milwaukee. The centre serves as a gathering point for the industry where established business people connect with new entrepreneurs to exchange ideas and collaborate.

### **A world water hub**

The Brew operates within the Global Water Center as a mentor-driven seed accelerator that focuses on global freshwater challenges through water technology entrepreneurs. Reed Street Yards, a global water technology business park, is located just across the street. The Yards is a 17-acre (6.8 hectare) office and research zone where water technology companies have the opportunity to construct buildings to their exact specifications and work within the region's industry network to develop new technologies. This development represents the community's cross-sectoral collaboration and subsequent strength of Milwaukee as the World Water Hub.

The Water Council experiences daily triumphs – programs are funded, new industry partners join the effort and opportunities present themselves. But there exists a broader triumph; an ever-stronger, ever-growing sense of unity and community around Milwaukee's water culture. Once, Milwaukee was an American city on a large freshwater lake. Now, we act locally and work globally: hosting delegations from other American cities

and foreign countries, calling our partners throughout the world and sparking the imagination of a new entrepreneur who wants the opportunity to work in the Global Water Center. Our partnership with the Global Compact Cities Programme affirms the belief that no one person, business or organization can solve the world's intractable problems alone. It is an effort that requires people in different sectors to recognize their industry and academic assets and then capitalize on their collaborative strengths.

Milwaukeeans have never needed to ask if our freshwater supply can support the region's population — the three rivers, numerous lakes and a Great Lake provide an overabundance of water. However, our complacency and inattentive government and business policies served our region poorly.

As we confront the freshwater issue in the 21<sup>st</sup> century, we are keenly aware of the delicate balance that exists between human productivity and protection of the

world's natural ecosystem. While Milwaukee uses its water technology expertise to strengthen companies through strategic water consumption and recycling processes, all parties involved feel passionately that our endeavour transcends our community and country. Our region's responsibility is great and we are humbled by the fact that our actions impact our fellow human beings across the globe. We proudly uphold the United Nations' vision: for our community, for our country, for us all.

*The City of Milwaukee has been a participant of the United Nations Global Compact since 2009. Engaging at the Innovating level, Milwaukee committed 15 water-related projects to its participation. Also a Leading city, Milwaukee has exemplary urban planning practices and shares lessons and models with other cities.*



(From left) Co-chairs of The Water Council, Rich Meeusem (CEO, Badger Meter) and Paul Jones (CEO, A. O. Smith Corporation) 'breaking the ice' at the Global Water Center opening with Scott Walker (Governor of Wisconsin). The initial concept for the council was born from Meeusem and Jones' vision that business could be leveraged for the region if Milwaukee's water companies came together in a cluster. Image: The Water Council.