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City of Milwaukee

Milwaukee's 'blue' revolution

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Milwaukee's 'blue' revolution

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Water resources have sustained Milwaukee since the city's founding and have helped make the city great. As a recognized leader in water research, technology and sustainable practices, Milwaukee has plans to be the Fresh Coast Capital of North America by embracing smart, achievable sustainability principles.

Milwaukee owes its existence to water, specifically its location at the confluence of Milwaukee, Kinnickinnic and Menomonee rivers and one of North America's five Great Lakes – Lake Michigan. In fact, the name "Milwaukee" is thought to derive from the Native American Ojibwe tribe word *ominowakiing*, which means "gathering place by the water".

Milwaukee's economic strength has been fueled by its water-intensive industries such as brewing, manufacturing, tanning, shipping and food processing. The extensive water use in these industries has seen companies develop to manage, measure, treat and transport water. These water-related companies have survived and thrived in post-industrial United States, even while the number of primary industries, such as brewing and manufacturing, declined in the city.

Milwaukee's civic leadership, including current Mayor Tom Barrett, has not forgotten the importance of local history and local waters to the city. To build on the historical and economic significance of being located on the largest surface supply of fresh water in the world, Milwaukee is currently leveraging its water resource assets with the latest research and technology to realign the local economy around water and become a water-centric city on America's Fresh Coast. On the world market, the water sector is valued at an estimated \$US483 billion.

Milwaukee has positioned itself as a world water leader, with over 20 college and university water research and talent-development programs, most notably at the University of Wisconsin—Milwaukee's School of Freshwater Sciences, which is dedicated to the study of freshwater resources. Milwaukee is home to global water technology leaders, with five of the 11 largest water-related companies headquartered in the region and 150 water-related companies that provide 20,000 local jobs. The Water Council is a first-of-its-kind public-private partnership, established to move Milwaukee forward as a

world water hub. The Water Council is now housed at the Global Water Center, which will anchor a water cluster eco-industrial redevelopment.

Finally, Milwaukee's efforts to capture stormwater runoff through the implementation of green infrastructure have contributed to the city's reputation as a national leader in sustainable water practices. Over time, the need to protect and conserve the waters surrounding the city has given rise to the realization that communities, businesses and civic leaders must collaborate and become more proactive in their policies and actions.

All of this has provided impetus to Milwaukee becoming a Global Compact Cities Programme Innovating city focused on water issues. Quite simply, Milwaukee exists because of its link to water. Its iconic industries rely on water both as a resource and as a source of inspiration. From yesterday's tanneries to today's craft breweries to the promise of the water tech industry in the economy of tomorrow, our environment is inseparable from who we are as Milwaukeeans and as a city. As a result, sustainability matters to Milwaukee.

A plan to ReFresh Milwaukee

In order to promote purposeful and strategic planning around the myriad of sustainability issues impacting the region, Milwaukee Mayor Tom Barrett appointed a 'Green Team' of community, business and government stakeholders to lead the development of *ReFresh Milwaukee*, the City's first sustainability plan. The 14-person team was chaired by the City of Milwaukee's Sustainability Director and was advised by residents as well as an *ex officio* group of regional government stakeholders. The entire planning process lasted 18 months and included extensive public input. The Mayor's vision for the planning effort was that the public sector and community work together to build a smarter city through sustainability. Milwaukee's economic development over the next 10 years will meet triple

bottom line goals that benefit residents, businesses and our natural environment. As a result, Milwaukee will be the Fresh Coast Capital of North America by embracing smart, achievable sustainability principles.

Specifically, the Green Team's mission was to develop a sustainability plan that sets a strategic direction for Milwaukee's sustainable economic development for the next 10 years by establishing quantifiable targets to meet the community's sustainability goals and identifying responsible parties to implement specific actions. As a result, the City of Milwaukee hired CH2M Hill to help guide the Green Team through the process of gathering public input and converting that input into sustainability goals and targets. This planning effort would not be a top-down exercise; instead, true priority setting would occur at the resident level to ensure the outcome would result in positive impacts on city neighbourhoods and improve the quality of life for all citizens. Gathering residential input was accomplished through six months of public outreach via neighborhood town-hall meetings, small discussion groups, surveys and public comments. The collected data was tabulated and analyzed to determine the public's top priorities. Once the Green Team established specific goals based on community preference they devised measurable targets for each. There was an additional six-month period for public comment once the first draft of the sustainability plan had been developed. Mayor Tom Barrett publicly released the final plan, *ReFresh Milwaukee*, in July 2013. It was adopted by the Common Council and signed into law and official City policy by Mayor Barrett in December 2013.

The process of fact-finding and public consultation revealed that although Milwaukee citizens consider the concept of sustainability to be important, three everyday challenges impeded overall quality-of-life in their neighbourhoods: crime and safety (neighbourhood conditions), access to quality education, and access to jobs. These issues need to be addressed before residents can focus on sustainability issues like clean air and water, adequate public transportation and access to healthy food. As a result, the Green Team determined that goal setting in sustainability priority areas like water and energy had to have outcomes that positively impact neighbourhood conditions, access to quality education and access to jobs. The important relationships uncovered during the first public comment period led to the development of the eight priority areas in the sustainability plan and the plan's overall emphasis on improving neighbourhoods, education access and job creation.

ReFresh Milwaukee acts as a 10-year roadmap and strategic framework to increase sustainability in eight priority areas — buildings, energy, food systems, human capital, mobility, resource recovery, water, and catalytic projects. It includes quantifiable and measurable targets for each goal. While the city is committed to meeting these goals and increasing sustainability in all of the focus areas, the chapter on water is of great importance considering the city's reliance on local waters for its sustenance, recreation and industry.

Among the four goals stipulated in the water chapter of *ReFresh Milwaukee*, the City of Milwaukee has made advances in three of them in the first reporting year: reducing stormwater and clear water from entering the sewer system; achieving swimmable and fishable waters in Milwaukee watersheds and near shore Lake Michigan; and establishing Milwaukee as America's water-centric city. The City of Milwaukee and its partners are evaluating conditions that impact the fourth goal — preventing new aquatic invasive species from entering Lake Michigan and Milwaukee area waterways — due to the complexity of the issue and the multitude of regulatory agencies and stakeholders involved outside of the city government.

ReFresh Milwaukee water goals and targets

Goal 1: Reduce stormwater runoff and clear water from entering sewer system

Targets:

- Baseline measures of impervious surface and green infrastructure established on a city-wide basis by June 2014.
- A city green infrastructure policy plan created by December 2014.
- A regional climate change resiliency plan that uses the best available atmospheric science developed, via city collaboration with partners by 2015.
- Volume of stormwater runoff captured through green infrastructure increased by 10 per cent annually.

Goal 2: Achieve swimmable and fishable waters in watersheds and the near shore of Lake Michigan

Targets:

- Total maximum daily load studies developed, with city assistance, for the Kinnickinnic, Menomonee and Milwaukee River watersheds and the Milwaukee Harbor estuary.
- All riparian corridors on all waterways and in the estuary preserved and expanded as redevelopment occurs, balancing both the built and natural environments.

Goal 3: Establish Milwaukee as a water-centric city

Target:

- Water-centric strategies used on both public and private projects across residential, business and commercial applications to substantially increase water conservation and citywide energy savings.

Goal 4: Prevent new aquatic invasive species (AIS) from entering Lake Michigan and Milwaukee area waterways

Target:

- Plan of action adopted by 2018, in coordination with Great Lakes cities, states, federal and international governments, to prevent new AIS from entering Lake Michigan and local waterways.

The Mayor's vision for the planning effort was that the public sector and the community work together to build a smarter city through sustainability. Milwaukee's economic development over the next 10 years will meet triple bottom line goals that benefit residents, businesses and our natural environment.

Benchmarking water sustainability

In June 2014, the City of Milwaukee's Office of Environmental Sustainability collaborated with Milwaukee Water Works (a City of Milwaukee-owned drinking water utility) and the Milwaukee Metropolitan Sewerage District (a regional wastewater treatment agency) to create North America's first comprehensive municipal water sustainability benchmarking report, the *2014 Sustainable Municipal Water Management Public Evaluation Report for the Great Lakes and St. Lawrence Cities Initiative*. Milwaukee was one of four cities that published this type of report for the Cities Initiative. The report was developed to evaluate the city's progress in conserving water and protecting waterways and highlights positive and negative growth in six goal areas consisting of 21 milestones. The report not only provides the community, city leaders and stakeholders with information relating to Milwaukee's water management, but may also encourage other municipalities to develop their own water assessments and lead to increased awareness and implementation of best management practices to conserve and protect their water resources.

Recently, the Office of Environmental Sustainability created a Green Infrastructure Baseline Inventory. This project quantifies the total area of impervious surface

and all known existing green infrastructure within city limits. The information provided in the report is a vital first step in drafting a green infrastructure policy plan for the City of Milwaukee. It also satisfies a specific target for the stormwater goal in *ReFresh Milwaukee*.

The results of the inventory can be utilized to track the percentage of imperviousness across the city as a whole and in each watershed, and will assist the city in determining optimal locations for implementing future green infrastructure projects to achieve the greatest impact and return on investment. In addition, the study provides a baseline for the current stormwater capture quantity through green infrastructure, which the City of Milwaukee can use to plan for new projects in order to meet *ReFresh Milwaukee's* target of increasing the volume of stormwater runoff captured through green infrastructure by 10 per cent annually.

Milwaukee is a highly active Global Compact Cities Programme participant, engaging at the Innovating level. The city made the commitment to the Ten Principles of the United Nations Global Compact in 2009.



A bioretention facility in the Menomonee River Valley redevelopment zone. Image: City of Milwaukee.