

The North Point Water Tower

The iconic and beloved North Point Water Tower, atop the bluff above Lake Michigan, is symbolic of over 145 years of water service.

The tower was designed by architect Charles A. Gombert, and construction was completed in 1873. Four years earlier, William Boyington designed a similar tower in Chicago but that tower is 21 feet shorter than Milwaukee's North Point Water Tower.

The 175-foot tower design was executed in cream-colored Wauwatosa cut limestone with a Cream City brick exterior trimmed with dressed limestone. The exterior is composed in three stages with a square, buttressed base, a tapered cylindrical tower topped with gabled roofs and finials, and a weather vane-crowned octagonal spire.

Constructed at a cost of \$50,892, the tower was a principal work in the city's original water supply system. Below the tower stood the North Point Station, where reciprocating steam engines pumped

"In an unprecedented fit of municipal whimsy, officials decided to surround the pipe with a fairy-tale stone tower worthy of the Brothers Grimm. The standpipe was capped decades ago, but the North Point Water Tower, minus Rapunzel, remains one of the East Side's most cherished landmarks."

HISTORIAN JOHN GURDA,
"THE MAKING OF MILWAUKEE"

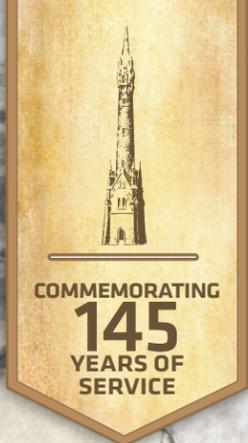
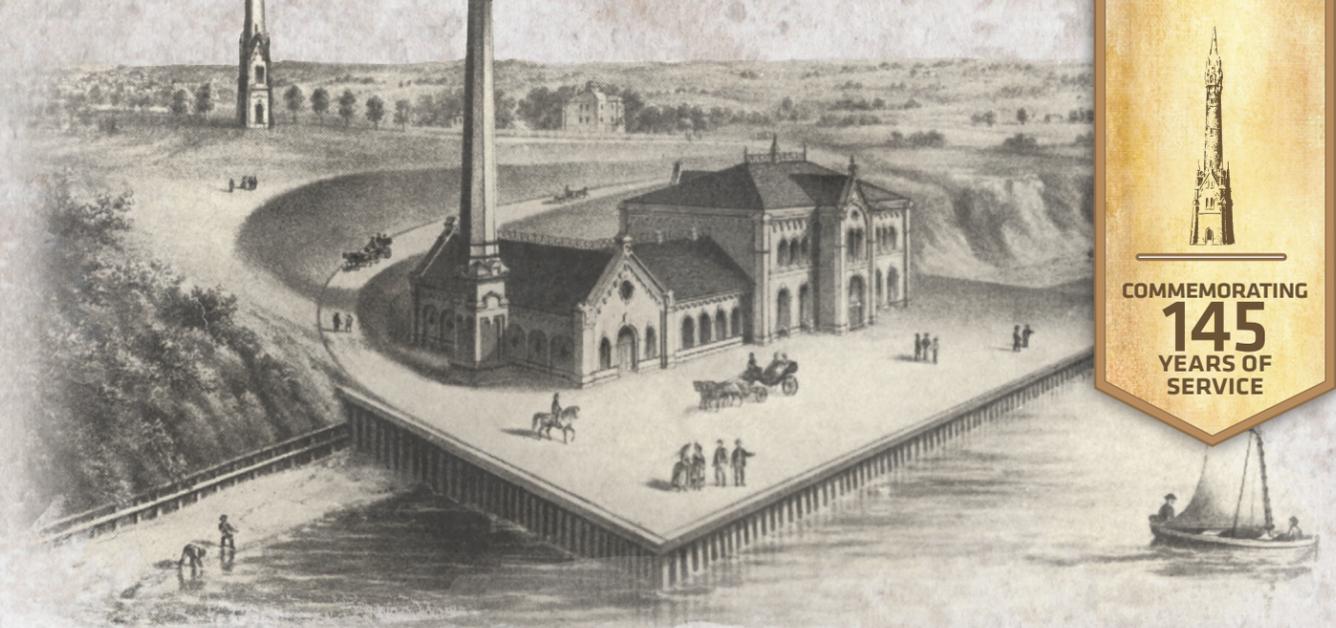
water from Lake Michigan. The tower covers a four-foot diameter, 120-foot tall iron standpipe that absorbed pulsations of water from the steam engines, easing the strain on the distribution system pipes. The exterior stonework prevented the formation of ice in the standpipe. Some 60 employees manned the steam engines around the clock.

By 1960, the system was becoming too costly to operate. The 86-year-old pump building, refurbished many times, was replaced by a new building and electrical pumps in 1963; the standpipe in the tower was taken out of service in May 1963.

At one time, Milwaukee had two other standpipe towers. Now, only the North Point Water Tower remains, standing in what was once a cow-grazing pasture at the city's northern limit. It bears landmark designations of city, state, and national historical, architectural, and water works distinction.

"Younger Milwaukeeans will have a hard time believing this, but about 60 years ago, there were cows in a pasture to the south of the then still new North Point Water Tower."
Estella L. Wengler, Haddam, Conn., sent this picture to the Journal.

MILWAUKEE JOURNAL,
JUNE 1, 1935



A Brief History of the Milwaukee Water Works

Lake Michigan water first entered the new Milwaukee Water Works on September 14, 1874. The City of Milwaukee had been incorporated 25 years earlier and had grown to more than 100,000 people.

There was a dire need for a central water source. Water was supplied by about 30,000 wells, often located near polluting outdoor privies and from the three rivers, Milwaukee, Menomonee, and Kinnickinnic. Vendors sold Lake Michigan water from barrels pulled through town on "water wagons." Waterborne illness was a daily public health reality. And, without a pressurized water system, a fire could potentially wipe out the city, which was largely comprised of wooden structures.

From 1857 to 1867 several companies proposed a water works but failed as the City was "overloaded with debts from previous bonds issued to assist railroads entering the city... municipal ownership of a water works seemed out of the question."

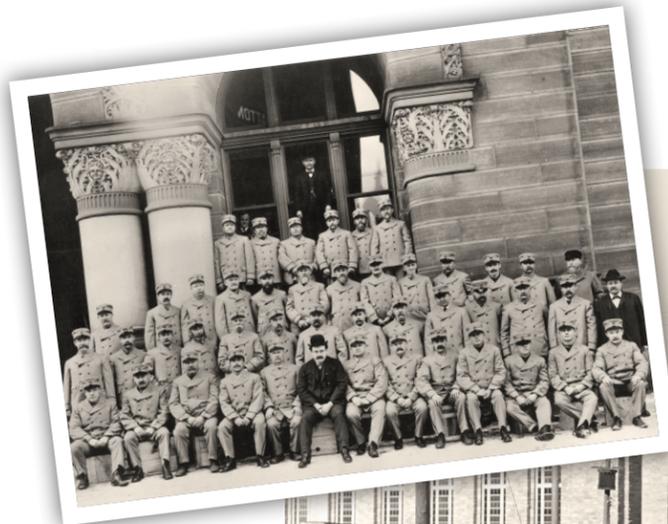
The City of Milwaukee brought its indebtedness within state limits so it could finance a system, and applied to the Wisconsin Legislature for authority to build one.

Working ahead of permission, the City hired E. S. Chesbrough, designer of Chicago's water works, to design a plan. He delivered a plan to pump water from Lake Michigan, not the rivers, in October 1868. Three years later, the state legislature authorized Milwaukee to readjust its debt and to build and manage a water works.

On April 18, 1871, a Board of Water Commissioners met to organize the utility:

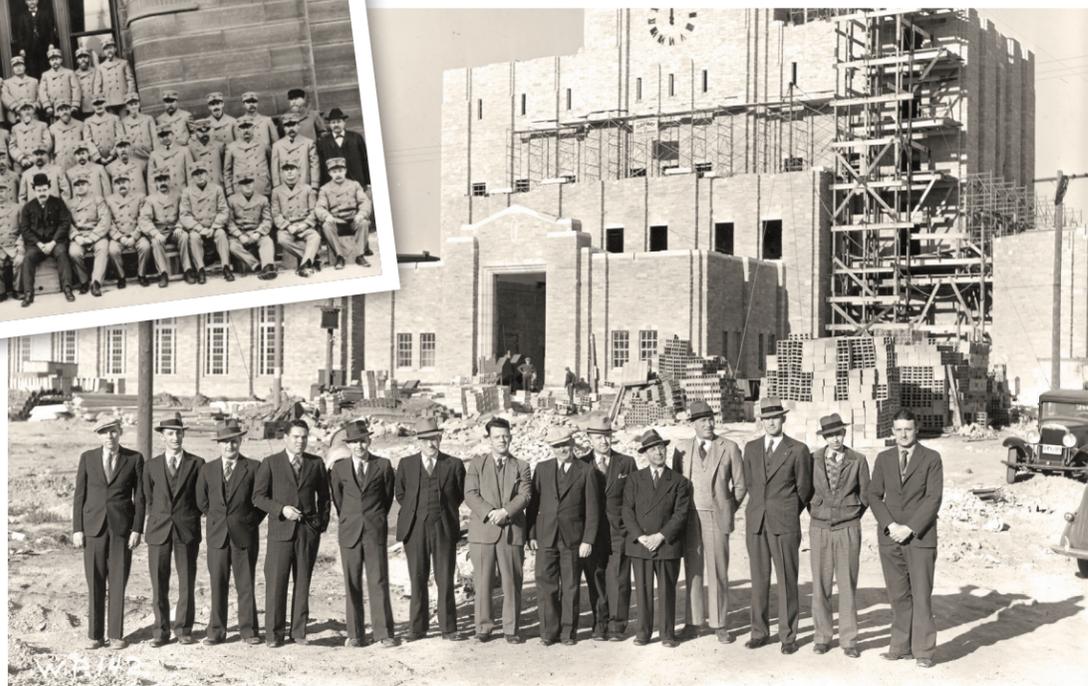
- U.S. Rep. Alexander Mitchell, founder of the Wisconsin Marine & Fire Insurance Co. Bank and president of the Chicago, Milwaukee & St. Paul Railway
- John Plankinton, founder of two meat packing operations that became Armour & Co.
- Edward Broadhead, superintendent and construction engineer for the Milwaukee & Mississippi Railroad Co.
- Edward O'Neill, former Milwaukee mayor (1869) and president of the Bank of Commerce
- Guido Pfister, owner of a tanning firm that became the Pfister Vogel Leather Co.
- Frederick Pabst, president of Best and Co. brewery; later, the Pabst Brewing Co.
- George Burnham, manufacturer of Cream City bricks made from cream-colored clay found on the lakeshore.

Five months later, in October 1871, catastrophic fires destroyed Chicago and Peshtigo, hastening the 1872 groundbreaking for a water works.



Upper Left:
Milwaukee Water
Works Employees at
City Hall, 1903

Right: Linnwood
Water Treatment
Plant, 1936



The first water works

The first water works, built at a cost of \$1.9 million consisted of

- a water intake
- a station, or building, on the lakeshore housing two steam pumping engines, each with a capacity of eight million gallons per day
- a standpipe inside the North Point Water Tower
- the Kilbourn Reservoir
- 58 miles of water mains

On September 14, 1874, the station began pumping water into the distribution system. The first of 1,807 customers to connect was Best and Co. brewery at North 9th and East Juneau Avenue. The works was designed to pump 16 million gallons of water per year but pumped only 1.25 million during the first year. The Milwaukee Water Works employed 22 people, including an Inspector of Plumbing and a Tapper, the only two authorized to use the utility's two horses and buggies.

Early Innovation in Water Treatment and Metering

By the early 1900s, bacteria from Milwaukee's polluted harbor began to reach the water intake. A system was installed to mix calcium hypochlorite, or bleaching powder, into the lake water before pumping it into

the distribution pipes. By 1910, chlorine was used as a disinfectant. An experimental filtration system was installed in 1919.

The Badger Meter Co., founded in Milwaukee in 1905, led the national move to install meters to avoid water waste and to fairly charge customers. By 1910, Milwaukee was one of the first cities with 100% metering, a public works distinction of the time. Also that year, the Milwaukee Water Works purchased its first motorized trucks. The last two horses and wagons were retired in 1914.

While the Milwaukee Water Works had been disinfecting and filtering lake water since 1919, there was no sewage treatment and sewers merely funneled waste into the rivers and lake for another six years. Historian John Gurda writes in *The Making of Milwaukee*, "... after a massive outbreak of diarrhea in 1916, voters decided that it was finally time to stop mixing raw sewage with their drinking water. In 1925, Milwaukee's present sewage treatment plant went into operation."

Social and Industrial climates reflected in water demand

In 1933, construction began on a drinking water treatment plant using coagulation, sedimentation, filtration, and disinfection to clean the lake water. The Linnwood Water Treatment Plant was built on 24 acres of landfill under the bluffs of Lake Park. It began operating July 2, 1939. The Neo Gothic exterior houses 32 water

filters with a capacity of 275 million gallons per day. The plant was named an American Water Works Association Water Landmark in 2019.

In the summer of 1961, the Linnwood plant recorded its highest single-day production of 267 million gallons. A post-war housing boom on the south side guided plans to increase capacity.

By 1962, the Howard Avenue Water Treatment Plant was completed. It houses eight filters with a capacity of 105 million gallons per day. The Cold War loomed, and the plant is notable for its lack of architectural features. Former Superintendent Elmer Becker noted the plant was designed "to resist bomb blast pressure" and "fallout from nuclear fission products."

Water use in Milwaukee began a steady decline in 1976, the result of more efficient water use by appliances and commercial machinery, and changes in the industrial landscape. Breweries, tanneries, manufacturers such as Allis-Chalmers and American Motors Corp. closed. The Milwaukee Metropolitan Sewerage District tied its sewer user charges to the water use bill in 1979, raising customer awareness to reduce their water use. Water sold dropped from 58 billion gallons in 1976 to 29 billion gallons in 2018.

Milwaukee transforms treatment standards with ozone and upgrades

The critical importance of clean water for public health was underscored in 1993 when a massive dose of the micro-organism *Cryptosporidium* passed through the water system. Working with water professionals and researchers from around the world, the Milwaukee Water Works transformed its manual, conventional system into the largest ozone disinfection retrofit in the world at the time, moved the two intakes deeper into the lake, upgraded the filtration system, and began a comprehensive water quality monitoring system.

In the 25 years since 1993, the utility invested \$508 million in its infrastructure to ensure a reliable supply of safe drinking water. The Water Research Foundation honored the Milwaukee Water Works with its 2016 Outstanding Subscriber Award for Applied Research for the response during the two decades following the crisis.

Today, the Milwaukee Water Works is recognized nationally as a leader in providing high-quality drinking water and for its comprehensive water quality monitoring program. The U.S. Environmental Protection Agency has endorsed its collaboration with health and environmental agencies to monitor and respond to public health issues.

The utility is owned by the City of Milwaukee. Policy is set by the Mayor and Common Council. The Environmental Protection Agency and the Wisconsin Department of Natural Resources regulate facilities, operations and water quality. The Public Service Commission of Wisconsin sets water rates and service charges and monitors accounting.

The Milwaukee Water Works provides water to 867,000 people in Milwaukee, Ozaukee, and Waukesha Counties:

Milwaukee	New Berlin
Brown Deer	Shorewood
Butler	St. Francis
Franklin (a portion)	Thiensville
Greendale	Wauwatosa
Greenfield	West Allis
Hales Corners	West Milwaukee
Menomonee Falls	Milwaukee County Grounds
Mequon	

[Visit Milwaukee.gov/Water](https://www.milwaukee.gov/Water)



Based in part on "A Century of Milwaukee Water, An Historical Account of the Origin and Development of the Milwaukee Water Works," by Elmer Becker, 1974.