



100 Years of Water

May 2014



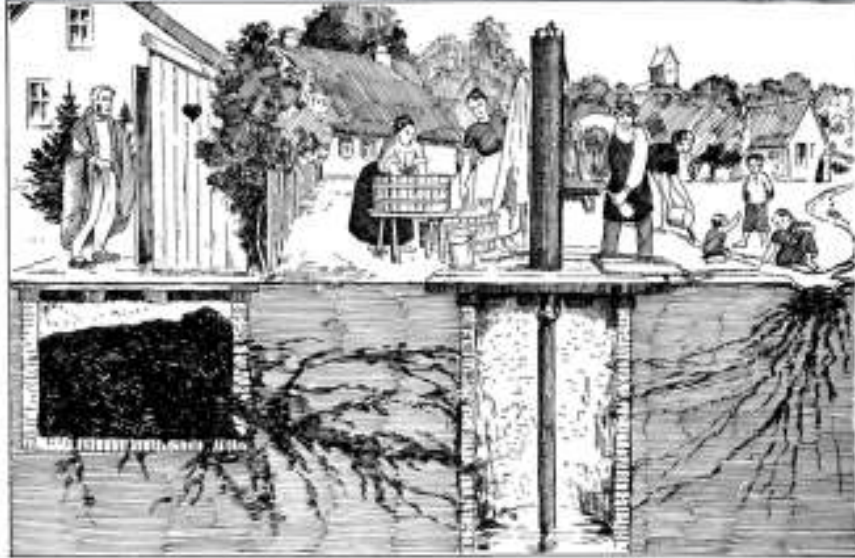
Early Water Supply and Plumbing



In 1870, the population of Evanston was 3,000 people. Everyone got their water from wells and cisterns. The water from the wells had high mineral content and unpleasant taste. Most people used outhouses due to the lack of indoor plumbing.



Early Water Supply and Plumbing Issues

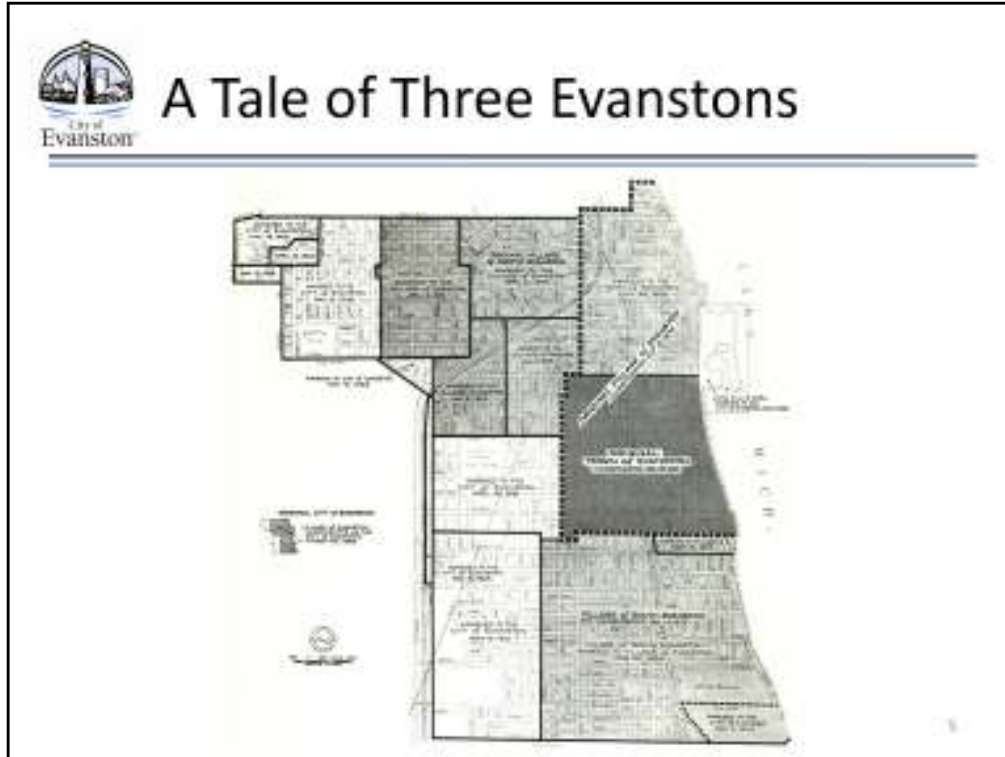


Most drinking water wells in the 1800s were very shallow as compared to modern wells. For this reason, they were vulnerable to contamination from outhouses and surface water quality fluctuations.



Then came the Chicago Fire of 1871.

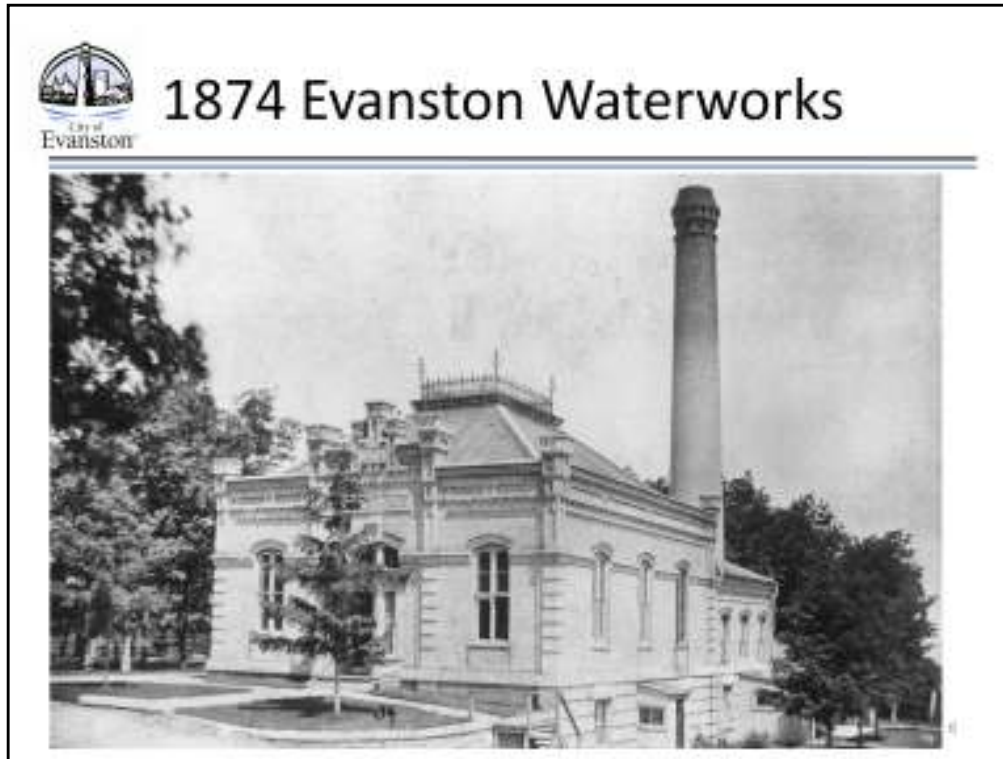
The image on the left is a map of Chicago. The dark area shows how much of the city was destroyed, which included all of downtown Chicago. Evanston went from a sleepy farm community to a busy town overnight as refugees from the fire moved into Evanston, which was unharmed. However, what was to stop the same fire from happening here? In towns built of wood houses spaced very close together, fires were always a concern.



At the time, there were three Evanstons: North Evanston, South Evanston and the Town of Evanston.

In both Evanston and North Evanston, Northwestern University owned so much of the land and did not pay property taxes, that the villages could never hope to raise enough money in taxes to put in water infrastructure. Both of these villages wanted to build a water pumping station and water mains to distribute water around town, but they were such small towns that they did not have the ability to sell a large enough bond to pay for it. They joined together to form the Village of Evanston in 1873 so they could afford to build the waterworks.

The Village of South Evanston did not join them – because Northwestern owned no land in South Evanston, everyone living there paid a fair share of taxes, and they were much better off financially. They decided to stay on their own for the time being and build a deeper well to provide water to the community.



The first president of the Village of Evanston board was Charles J. Gilbert. He was determined that Evanston would build a waterworks using Lake Michigan water. He traveled all over the country to determine who the best engineers were and what type of pump should be installed. However, the estimated cost to build it was \$80,000, which was a lot of money at that time. A lot of people argued against spending that much. It became a huge political fight between two groups of people: those for progress and those who thought it was a waste of money.

In December 1872, the Village of Evanston had two fires. With everyone still remembering the Great Chicago Fire from two years before and with all of the new wood houses going up, it was decided that the city needed water to fight fires. The waterworks project finally had widespread support.

In 1874, thanks to Charles Gilbert, Evanston purchased its first steam-powered pump and started pumping Lake Michigan water and distributing it around Evanston. Northwestern University donated the property for the waterworks, which is why it is right next to Northwestern University today.

Charles Gilbert became known as the Father of the Evanston Waterworks, and the first pump was actually named CJ Gilbert. Building the waterworks greatly decreased the risk of fires and provided the luxury of high-quality lake water delivered right to your house. CJ Gilbert could pump 2 million gallons per day. It ran continuously for 17 years for an average of 23.7 hours out of every 24 hour period.




South Evanston Waterworks



Meanwhile, the Village of South Evanston wanted their own water, so they drilled a well 2600 feet deep and built a pumping station to distribute the water around their town. Unfortunately, the quality of the deeper well water was still not very good. It had so many minerals in it that when people watered their plants, it left a white powder on them as it evaporated. The residents of South Evanston wanted high quality lake water too.

The Village of South Evanston bought some land at the lakefront and built their own pumping station to supply lake water. Unfortunately, the main sewer for the village dumped sewage only about 600 feet from the intake for the pumping station. This contaminated the water supply.

South Evanston was still small and could not afford to build a long intake pipe to get past the pollution. In 1892, South Evanston became part of the Village of Evanston too, and their water system was connected in. Now everyone in Evanston could get high quality Lake Michigan water. South Evanston's former pumping station was converted to a firehouse, and is now the site of the Firehouse Grill (corner of Chicago Avenue and Kedzie Street).



Public meetings were held to convince people to support the filtration plant.

ATTEND

Parents' and Citizens' Meeting

LARIMER SCHOOL

DEWEY SCHOOL

FOSTER ST. SCHOOL

Thursday, Dec. 12, 1912

8 o'clock p. m. sharp

To consider the plan proposed for building a filtration plant to furnish a **clean** and **pure** water supply for **all citizens** of Evanston at **all times**.

Full information will be given on this important subject by competent speakers.

Whether **for** or **against** filtration have an **intelligent** reason for your vote.

Opportunity will be given for questions and open discussion. A large attendance of parents and citizens is desired.

Ladies Specially Invited

Frank R. Grover, George F. Engelhard, Mayer Padon and others will speak.

ATTEND

Once again, improving the waterworks became a hot political topic. People were again divided into two factions – those that wanted progress and those that thought it was a waste of money.

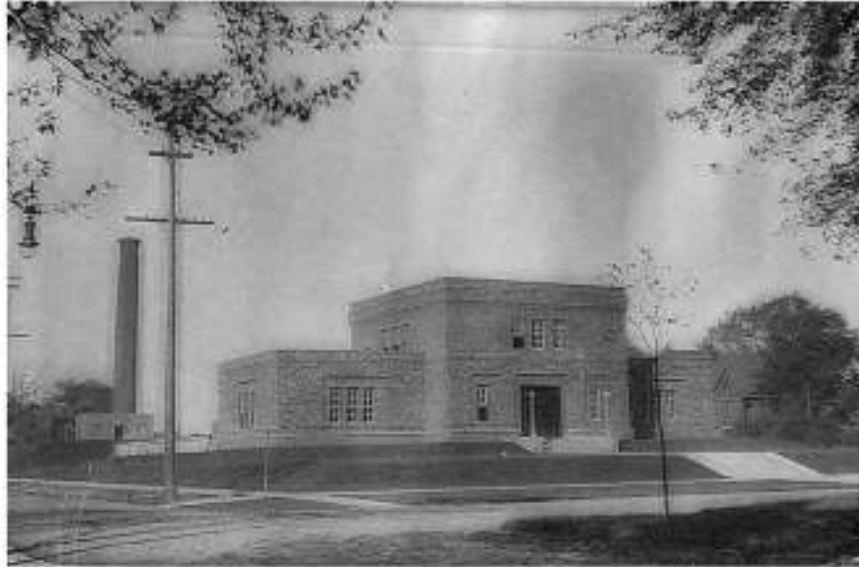
The City Council formed a Water Subcommittee who visited existing water plants in towns all over the country in places like Moline, IL; Louisville, KY; and New Orleans. They gathered data that proved that drinking filtered water decreased typhoid, which was a very controversial idea at that time. They invited the residents to public hearings to present the report and gather support.



In 1912, the Evanston City Council approved hiring an engineer to design the plant. Construction began in 1913. Building such a large facility was not simple. Today we use modern trucks to mix concrete and bring it right to the site. In 1912, teams of horses graded the site. Concrete was mixed by hand and hauled around in wheelbarrows.



1914 Filtration Plant



The new filtration plant went into service in July 1914. The new water filtration plant was able to provide 12 million gallons of water per day to the City of Evanston, and the instance of typhoid and cholera dropped dramatically.



1914 and 1924 Filters



Evanston and the surrounding area continued to grow so quickly that an addition to the water treatment plant was built in 1924, doubling its capacity to 24 million gallons per day.

The 1914 and 1924 filters are still producing water today even though they are 90-100 years old. You can stand in the water plant right now and take almost the same picture as shown above.



1924 Pump House



After the 1924 plant expansion, the pumps were still powered by steam produced by burning coal onsite. This was very energy intensive and produced a lot of pollution.



2014 Pumping Station



We no longer use coal for power – instead we use electricity generated from 100% renewable energy sources like wind and hydropower. We use natural gas for backup power, because, even if the power goes out, we still need to run our pumps 24 hours per day, seven days per week. Just like in 1874, we never stop delivering water.



Evanston Water Utility Today



Since 1924, the water plant has had two major expansions, with a current capacity of 108 million gallons per day. We continue to make improvements. Every year, we spend an average of \$3 million to upgrade the treatment plant and another \$3 million on water main replacement to make sure the City can continue to provide clean, safe, and reliable drinking water to the residents of Evanston.



References

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- History of Northwestern University and Evanston, Robert D. Sheppard, DD and Harvey B. Hurd, LLD, 1906
- Report of the Department of Health of the City of Chicago, John Dill Robertson, M.D., 1911-18
- Report on Filtration by the Special Committee of the Council, Walter W. Jackson and Langdon Pearse. April 16, 1912