

The Streams Become a River

Ypsilanti Water History

BY MICHAEL BODARY

Origins

The area's history with Europeans began in 1809 when three French explorers—Gabriel Godfroy, Romaine LaChambre, and Francois Pepin—established a trading post on the west bank of the Huron River approximately 100 yards north of the Old Sauk Trail (now Michigan Avenue). It was also near to the historic Potawatomi trail, and the riverbanks of the Huron were often used by Native Americans for summer fish camps. By 1811 a claim was laid out for four French Claims of 2632 acres.

As settlers came to the Ypsilanti area, wells were hand dug for drinking water, and latrines for waste. As time went on and technology advanced, wells improved by drilling and sinking of driven wells to draw cleaner water from the local water tables. Potable water was mostly derived from wells. The glaciers left water bearing gravel that was used by property owners.

Water Treatment Plants

Drinking water for the City of Ypsilanti was eventually obtained from deep wells. The water was processed and distributed by the Catherine Street Water Treatment Plant (WTP) and pumping station, often through water mains originally made of hollow oak logs. After the construction of the stone Water Tower in 1890, water was pumped up there for storage in times of need.

Originally, most of the drinking water for Ypsilanti Township, much like the city, was obtained from deep wells. This water was processed and distributed by the Bridge Road Water Treatment Plant. In 1972 Ypsilanti Township contracted with the Detroit Water and Sewer Department (DWSD) to provide water to the township to supplement the Bridge Road WTP production; this water connection is known as YT01. The township and DWSD agreed that when DWSD constructed a second water main to the pumping

station supplying the township for redundancy, the Bridge Road WTP would be closed. When the second main was constructed in 1994, water production at the Bridge Road Plant ceased.

Due to the economics of maintaining the Catherine Street WTP, in 1995 a water main was constructed to provide water purchased from the DWSD to the City of Ypsilanti. The Catherine Street WTP was closed in 1996.

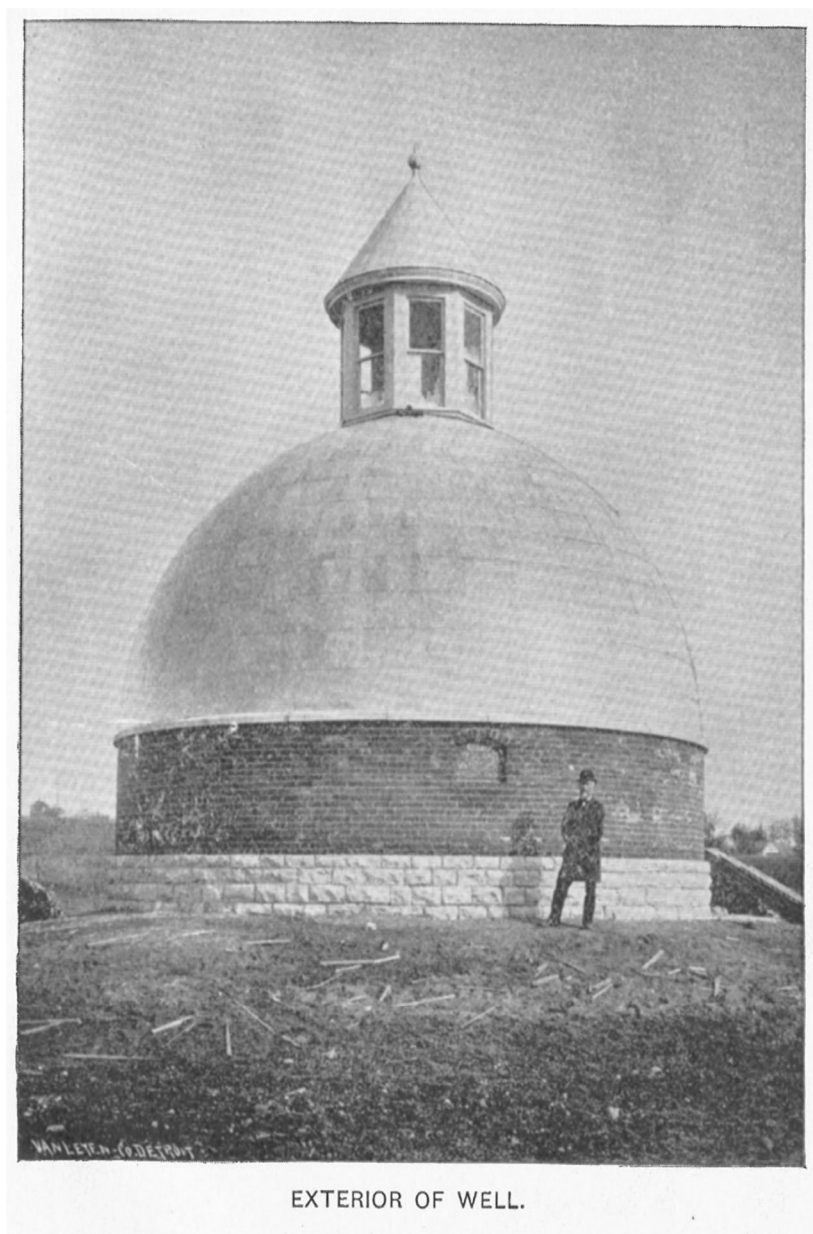
Creation of YCUA

Control of pollutants started to become a concern to many communities along the Huron River and Lake Erie. Algae blooms and growth of weeds began to hinder recreation. Periodic accidental release of untreated sewage happened all along the river. This made sewage treatment a critical need for any type of safe use of the river. Pressure was mounting from the State Water Resources Commission.

The Ypsilanti Community Utilities Authority (YCUA) was formed in 1974. The need for a new wastewater treatment facility was the most significant driving force to bring about the creation of YCUA. The City of Ypsilanti had a treatment facility constructed in 1962, but it was not able to adequately clean the treated water to acceptable standards. Pollution deposits in Ford Lake contained heavy metals and dangerous pollutants from the automotive industry including Ford Motor Company, chrome plating shops, and parts suppliers. In the late 1960s, Wayne County proposed a regional wastewater treatment for the Huron River watershed called the “SuperSewer,” which included wastewater from western Wayne County, eastern Washtenaw County, and southern Oakland County. None of the governments involved really favored this idea because of unclear cost determination to the city and township for their portions.

By 1972 Washtenaw County officials feared that the project to stop the pollution of the Huron River would never be built. Washtenaw County proposed building a new Ypsilanti regional wastewater treatment plant (WWTP) as required. Receiving 75% federal funding of the project was feasible only by combining the water and sewer departments of both the city and township. They had to attain economic benefits by eliminating duplication of staff, and economies of scale would be achieved. YCUA was formed in 1974.

The fact that the city is almost completely surrounded by the township made the combination of the two systems an obvious economic advantage. Former Ypsilanti Mayor George Goodman (1972–82) recently commented about the formation of YCUA. He mentioned the historically significant cooperative formation between the city and the township, both of whom had to lay aside past differences to accomplish the formation of a utility authority. This provided the treatment volume and funds necessary to obtain the federal grants. The wastewater plant opened in 1982 with a capacity of 28.9 million gallons per day (MGD).



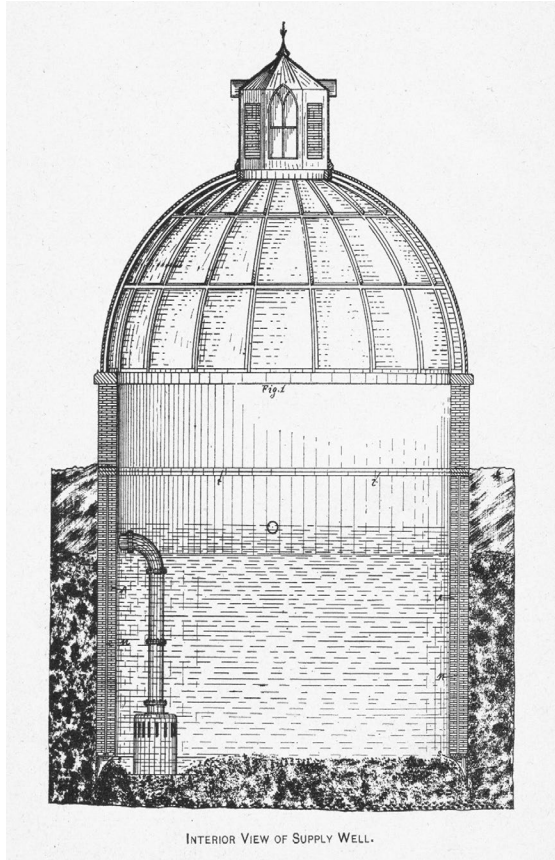
EXTERIOR OF WELL.

Exterior of Ypsilanti Catherine Street Deep Water Well

Initially, the average daily wastewater flow to the WWTP was approximately 13 MGD. In 1988 YCUA entered into an agreement with the Western Township Utilities Authority (WTUA) to receive up to 8.7 MGD and the rights to expand the WWTP in the future. YCUA purchased the rights to use a patented biological nutrient removal process at the WWTP. The biological nutrient removal process, entitled the Anoxic/Oxic (A/O) process, was installed in 1993.

In the expanded WWTP, all passes are operating under A/O. The A/O process removes phosphorus from the wastewater without chemical addition. Aluminum Sulfate (Alum) is stored onsite as a back-up to A/O Process for phosphorus removal. The A/O process

reduces both the purchasing of Alum chemical and sludge production at the WWTP facility. In 2000 WTUA exercised that right, and the WWTP underwent an expansion and improvement project that increased the capacity to 45.9 MGD. Primary filtration is through solids removal. In addition, some highlights of the project were the ultraviolet disinfection facility that replaced chlorination for disinfecting the wastewater, and the original multiple hearth incinerator was replaced with a more efficient fluidized bed incinerator. Also, additional sand filters clean the effluent to a higher degree than required. In 2009 an engineering study was conducted that evaluated the capacity of each of the major treatment processes. The Michigan Department of Environmental Quality (MDEQ) concurred with the methodology used in the engineering study and approved of the YCUA WWTP being rated at 51.2 MGD annual average design (daily) flow. For the fiscal year 2010–11, the average daily flow of wastewater to the YCUA WWTP was 22.3 MGD.



Interior of Ypsilanti Catherine Street Deep Water Well

YCUA Today

Today, YCUA provides drinking water to approximately 120,000 people and wastewater services to approximately 328,000 people. The average daily flow of wastewater to the YCUA WWTP is approximately 30.3 MGD.

YCUA provides water and wastewater services to the City of Ypsilanti, Charter Township of Ypsilanti, Pittsfield Township, Augusta Township, Sumpter Township, and Superior Township. YCUA also contracts with the WTUA to provide wastewater treatment services for the Townships of Canton, Northville, Sumpter Township, and Plymouth.

Annually, YCUA processes more than eight billion gallons of sewage at the wastewater treatment plant (WWTP) located at McGregor and State Streets near Willow Run Airport. YCUA delivers five billion gallons of water each year. In the City of Ypsilanti and Ypsilanti Township, YCUA delivers services directly to approximately 25,000 homes and businesses. In the other communities, YCUA contracts to provide wholesale water and/or wastewater services.

YCUA's annual operating budget in 2021–22 is approximately \$45 million. Upcoming capital improvements to facilities are planned to cost approximately \$18 million. Delivering water to their customers and collecting and treating the wastewater generated are the primary functions of the authority. Assuring the continued viability of their



Ypsilanti Wastewater Treatment Plant on Ford Lake, c. 1962

existing infrastructure and planning for the future water and wastewater needs of these communities is a vital function.

Growth within WTUA's service area resulted in a request to expand the WWTP to treat the additional wastewater generated in their communities. Construction on the WWTP expansion and improvements project, which added 17 MGD capacity to the facility, began in 2002 and was completed in 2006. Following completion of the expansion project, the WWTP is now rated to treat 51.2 million gallons of wastewater per day. Average water use is 11 MGD. In the summer, use may exceed 21 million gallons in a single day.

Many water and sewer mains within Ypsilanti and Ypsilanti Township are identified as needing replacement, either because of age or inadequate size. These replacements are being scheduled as time and funds permit. Side streets were replaced after a successful vote of the city residents in 2003, followed by the repaving of those streets. Major streets (Huron Street, West Cross Street, Washtenaw Avenue, Hamilton Street, and Michigan Avenue) are getting the aging water mains and sewers replaced in 2022 and 2023. This will be followed by the State of Michigan repaving most of these, which are part of the State trunk line, M-17. Some pipes are as much as 120 years old and can fail whenever frost and winter conditions prevail.

The Ypsilanti Stone Water Tower

Ypsilanti's Stone Water Tower celebrates its 133th birthday this year. The tower was constructed in 1890 and has been in continuous service since that time. It stands 147 feet tall at the intersection of Cross and Summit streets, the highest point of elevation in the city. Its reservoir contains a steel tank with a 250,000-gallon capacity. The main purpose for the reservoir was to store a supply of water to feed cast iron mains constructed in 1885 and to generate electricity for city streetlights via the falling water. The elevation also provided sufficient gravity pressure to furnish water for fire emergencies.

The Queen Anne-style tower was built as part of an extensive water works project and was designed by construction engineer William R. Coats, who considered purpose as well as overall appearance. Resting on a foundation of concrete mortar six inches deep, the substructure walls made of Joliet stone are 40 inches thick at the base and 24 inches thick at the top. Constructed on top of the walls were ten-inch steel I-beams spaced two feet apart and crossing the walls at right angles. The steel reservoir tank rests on the beams and walls of the substructure. Finally, there is a cupola with glazed windows.

The tower was constructed with local day labor at a cost of \$21,368. Former Ypsilanti Mayor George Goodman's grandfather, Lewis Goodman, was one of the laborers who built the water tower. The workers constructed three stone crosses, one over the outside west door and two others inside the tower, to protect them from injury. In fact, there were no fatal accidents during construction.

To maintain the solidity and beauty of the tower, YCUA had the structure renovated in 1976 at the cost of \$114,694. This involved re-shingling the roof, replacing beams and barriers, repainting, and other general repairs. In 1987 YCUA reconstructed the entry doors. With each repair and renovation, YCUA has always attempted to maintain the original appearance of the tower. YCUA marked the historical water tower's 130th birthday by giving it a thorough updating while once again retaining its original design. Work on the steel tank finished in 2001, including spot-welding to repair a small leak and other compromised locations on the tank, painting the exterior bottom, re-coating the entire interior surface, and replacing the interior ladder.

A Note on Sources

YCUA records were the source of information for this writing. All images are the property of YCUA.

About the Author

Mike Bodary was first appointed to the YCUA Board of Commissioners in 2012. He was elevated to chair in 2018 and continues to serve in that capacity.