

History of troy new york water supplies research paper examples

[Environment](#), [Water](#)



The major source of water in Troy is ground water, also referred to as well water, which is stored below the ground surface in large deposits. The water percolates to the surface where it is harvested. This water, however, might not be fit for human consumption, therefore, monitors on the physical and chemical compositions, and bacterial contaminants are necessary in order to ensure quality (Bungay 23-40).

The development of the Troy Water Supply System started in the early years of 1800's. During these early stages of the project, spring water was supplied through wooden pipes. This was a project of the Aqueduct Water Works. This majorly took place in the commencement of the 19th century (Bungay 23-40). In 1966, the first Troy's water treatment plant was constructed. Before the construction of this plant, Troy had been infested with "black" water, numerous and endless small and large water main breaks, and periodic "boil water" orders from the Health department. The Aqueduct Water Works Company channeled water along the west slopes of Mount Ida in the region east of Liberty Street (Bungay 23-40).. Troy became a city in 1833 and contracted for the construction of three reservoirs on the Piscawan Kill, the stream through what is currently referred to as Freak Park. In 1834, the construction of two open and one closed reservoir located east of the Main Railroads in Eddy's Lane and Boston were completed. These three reservoirs had a combined capacity of one million gallons.

The amount of water supplied was insufficient; this led to the realization of the need to increase of the supply by 1838. This led to a new study on the construction of new reservoirs and direct pumping of water from the Hudson River. The study found out the possibility of a fourth reservoir and it was

constructed and called the Fire Dam. It was located west of Oakwood Avenue, east of the other three reservoirs that were already existing. These reservoirs did not offer enough supply to the increasing population and another one was constructed in 1840 located approximately 2 miles north of the city of Piscawan Kill. It was called the Brunswick Reservoir.

Towards the end of 1860, the Oakwood reservoir was constructed increased the supply of water to the residents. A pump was installed to pump water from the Hudson River. However, shortages increased with the increasing number of households who required more water for their daily usages. In a move to curb the increasing shortages, in 1862, fire pumps supplemented the supply from the Hudson River and the upper Oakwood Reservoir was also constructed in the following year in the Frear Park region for this purpose.

The construction of reservoirs considerably increased over time. In 1868, Venderheyden Reservoir was constructed west of Brunswick Reservoir. This construction saw the rise in the storage of the reservoirs to approximately 400 million. Pumping from the Hudson River was also increased in 1879 and another reservoir was constructed on Piscawan Kill to serve the higher locations of the city (City of Troy, NY/Public Utilities p7-15). Between 1883 and 1885, the first three reservoirs were abandoned and new ones created at these sites. The new reservoirs had greater carriage volumes than the previous ones and they enhanced water supply, especially in the lower Oakwood, they were generally referred to as the Lower Oakwood Distribution Reservoirs, and were connected to the distribution at River Street. The Lansing burg village developed its own water supply system between 1883 and 1900. The supply was located in the region North East of the Miami

Beach. It consisted of three main reservoirs: the Interceptor, the Lansingburg storage and Distributor Reservoirs. They had an approximated capacity of 60.6 million gallons.

All through this period, the water supplied in the city was not treated. The construction of a filter plant for treatment of Tomhannock water in 1905 became the first project aimed at treating water. This project was conducted alongside construction of two standpipes and pumping stations to service the city. The supply of water by gravity from Tomhannock proved sufficient. This led to the closure of the 123rd Street Pumping Station, Lansingburg reservoirs and Deep Kill in 1906. In the first 8 years of the operation of this project, there occurred occasional interruptions in the supply of water due to occasional maintenance and repairs arising from leaks and breakages on the steel pipes used for distributing water. Pressure reducing valves were used around 1916 to drive water upon the completion of interconnection between the two twenty-four inch mains in the Lower Oakwood Distribution Reservoir (Geological Survey (U. S.)).

There were further developments in the eastern regions of Troy in 1914 with the increase of the Grafton supply capacity. The Martin-Dunham Reservoir was constructed in a move to accomplish the above capacity expansion. A sixteen-inch main was constructed parallel to the existing twenty-inch at Lake Avenue to increase transmission capacity of Venderheyden Reservoir to the city. There were several upgrading in the transmission lines to 20 and 30 inches in order to increase distribution capacity.

Liquid chlorine was added to water from about January 1925 in the first attempt to treat water comically (Geological Survey (U. S.)). At around 1960,

Troy discovered high amounts of water contamination problems. In solving this problem, all lines were cleaned and cemented. Their diameters were also increased to ease the flow of water. The new 45 million gallon water treatment was approved in 1963 and its construction began. The construction ended in 1966 (Sweet 12-36). Troy also erected a 4 million gallon elevated tank for the storage of water on Tibbits. Troy's water treatment plant begins at the Tomhannock Reservoir to this Tibbits Avenue storage tank. Towards the end of 1980's, another treatment method was in use. Sludge lagoons were built to assist in the filtration of sludge from the water through gravity. However, the treatment of water has constantly goes under survey in order to provide clean drinking water to the residents of Troy (Department of Environmental Conservation). Other methods that have been used in water treatment in Troy include alum addition, which was used to sediment solid matter; rapid sand filtration and addition of lime to reduce the corrosive action of water. Carbon was also added to the water for taste and odor control. Additionally, potassium permanganate, which controls manganese and fluoride for teeth protection have also been methods used in water treatment.

Map of Troy water distribution

Conclusion

There have been major developments in the water distribution in Troy. From the ancient wooden pipes, which carried limited amounts of water to the lined and cemented steel pipes, which can easily be maintained and repaired. The latter also carries large volumes. Water pumping has increased from steam or fire pumps to gravity pumps and electronic pumps. Water

storage has been greatly improved to include the largest elevated storage tank at the Tibbits Avenue that has high volumes. The major achievement that has been arrived at by the Troy water is the treatment of drinking water.

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