ERIE WATER WORKS
SPOTLIGHT ON 2018 CAPITAL IMPROVEMENT PROJECTS

STORAGE PROJECTS

➢ LANCASTER TANK & CHERRY STREET HYDROPILLAR INTERIOR & EXTERIOR RECOATING


Lancaster Tank


Cherry St. Hydropillar

The 1.0 million gallon (MG) Lancaster Tank (near Grandview School) received new interior and exterior coating systems in 2018. The tank was originally constructed by Pitt-Des Moines in 1990. The 38-feet diameter, 130-feet deep welded steel tank provides water for average and peak day use and emergencies (such as power outages or fires) in Millcreek Township.

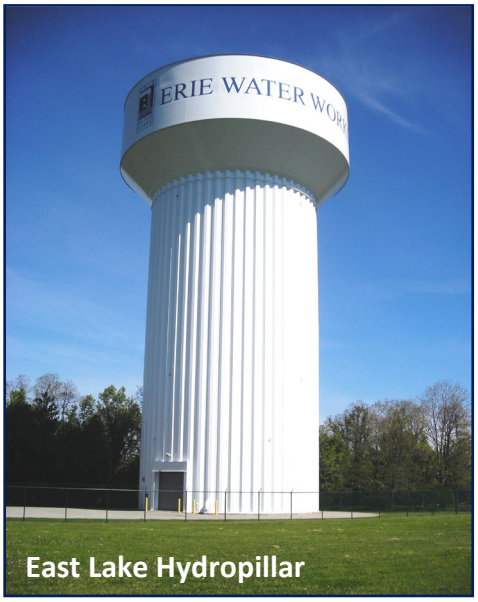
The Cherry Street Hydropillar (also called "South Tank") just north of I-90 on Cherry Street Extension was originally constructed in 2004 by Chicago Bridge & Iron. The storage facility is also 1.0 MG and is about 110-feet tall. Only the upper, wider portion of the tank holds water. The 'bowl' is about 75-feet in diameter. The interior and exterior were recoated in 2018.

It is necessary to maintain and repair tank coatings in order to prevent corrosion of the steel underneath. Failure of the steel could cause significant disruption to our customer's water service. Keeping EWW tanks in a reliable operational state is critical to our business.

➢ WATER STORAGE TANK MIXING SYSTEM INSTALLATIONS

Both the 1.0 MG Cherry Street and the East Lake Pressure District Hydropillars had mechanical mixing systems installed in 2018 to promote uniform water quality and to help control disinfection byproducts. Providing the means to promote circulating water storage tanks helps to keep chlorine levels uniform, reduce water age in the distribution system, and help prevent thermal stratification (especially in the winter!). Three additional mixing systems will be installed in 2019 in order to help EWW continue to provide World Class Water!


PAX Mixer

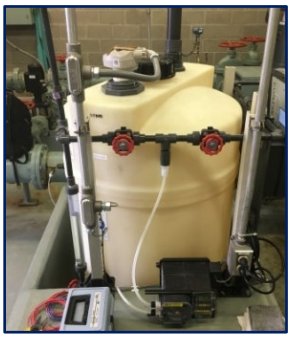


East Lake Hydropillar

ERIE WATER WORKS
SPOTLIGHT ON 2018 CAPITAL IMPROVEMENT PROJECTS

TREATMENT PROJECTS

- **ECHO HILLS PUMP STATION DISINFECTION SYSTEM IMPROVEMENTS**



The project installed a Sodium Hypochlorite disinfection system at the Echo Hills Pump Station in Millcreek Township. Echo Hills fills the Sterrettania Tank and provides water to over 1,100 people. The new system includes a chemical storage tank, peristaltic metering pump and instrumentation to control the process. Sodium Hypochlorite is a very important part of the treatment process as it is used to disinfect the water to ensure the minimum chlorine residual is present at all times to protect public health.

- **RSW WTP SULFURIC ACID BULK FILL STATION**

The Richard S. Wasielewski Water Treatment Plant (RSW WTP) is EWW's main water treatment facility. Recently, EWW installed a bulk fill station for Sulfuric Acid which is used in the ultrafiltration membrane cleaning process. This project will allow the chemical to be purchased in bulk for financial savings compared to the tote system that was in place. In addition, the bulk chemical transfer is a much safer option for Operations staff. The construction work was completed in 2018 and the system will be placed in operation in early 2019.

TRANSMISSION & DISTRIBUTION PROJECTS

- **EAST AVENUE WATER MAIN REPLACEMENT**

PENNDOT and the City of Erie had planned to demolish the Viaduct. EWW's 1937 water main ran parallel to and beneath the structure. This main was ranked as the 10th most critical replacement project based on the 2017 Water System Master Plan. EWW staff designed and bid the improvement in February 2018 in order to meet PENNDOT's schedule. Approximately 1,200-feet of 12-inch water main was replaced as part of the project including a previously un-encased Railroad Crossing. Reinvesting in our aging system is critical to long-term sustainability.

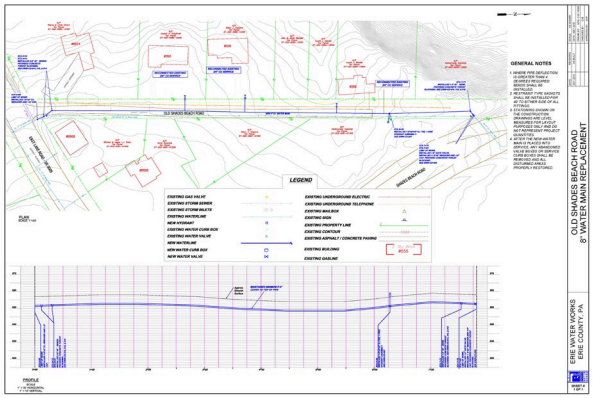
- **PEACH STREET WATER MAIN REPLACEMENT (CRAIG-26th)**

The subject water mains have had over 40 breaks since 1997. Originally installed between 1891 and 1930, the mains were located within PENNDOT pavement which results in costly repairs and restoration. The project replaced the 12-inch and 6-inch water mains with a single 12-inch main. The new main runs from 26th Street to Craig Street along Peach Street and between Peach Street and State Street along 26th Street. Replacing infrastructure is an important challenge facing public and private utilities across the United States.

ERIE WATER WORKS
SPOTLIGHT ON 2018 CAPITAL IMPROVEMENT PROJECTS

➢ **SHADES BEACH WATER MAIN REPLACEMENT**

The final phase of EWW's East Lake Road Water Main Replacement (from Irvine to Bartlett) will pass by Shades Beach Road. All but 900 feet of the 1966, 6-inch water main on Shades Beach Road has been replaced within the past 15 years. The last section has been prone to failure so EWW staff designed and constructed the project in 2018. Improved service and fire protection will result for this area in Harborcreek Township.



➢ **CASCADE STREET WATER MAIN REPLACEMENT**

This project replaced the existing water main along Cascade Street between West 4th Street and West 2nd Street in the City of Erie. The existing 4-inch cast iron water mains were installed in 1894 and 1938, and were replaced with a new 8-inch ductile iron water main, including new fire hydrants. The existing water mains had been subject to many breaks in recent years, and had reached the end of their useful life. The project was completed by Chivers Construction of Fairview, PA.

➢ **INTERCHANGE ROAD WATER MAIN REPLACEMENTS**

PENNDOT is undertaking major improvements along Interchange and Zimmerly Roads near the Millcreek Mall and I-79. Three different water main sections were relocated in order to accommodate drainage improvements, retaining walls, and new utility lines such as storm sewers and retention facilities. PENNDOT is funding 75% of EWW's reconstruction costs. The construction was completed in 2018 by Swank and their subcontractor Turjan.

GENERAL PLANT PROJECTS

➢ **SCADA SYSTEM IMPROVEMENTS**

Supervisory Control and Data Acquisition Systems (SCADA) help EWW staff control the water distribution system including pumps and tanks. A new operating system, called Ignition, was installed by Erie's Process and Data Automation. All MTWA facilities added to EWW's system are being upgraded as well so that control can be available to operations staff. These improvements will help ensure a continuous and reliable operation!