RE: Celina City
Report
Lead Mapping
Drinking Water Program
Mercer County
PWS ID: OH5400011

City of Celina, Water Department

Lead Service Line and Fixture Mapping Project 2017

James Watson Riley established Celina in 1834, and is the county seat of Mercer County. In 1880, only 1,346 people resided in the community, but over the next decade, Celina's population nearly doubled to 2,684 inhabitants. The primary reason for this population growth was the discovery of oil and natural gas deposits during the 1880s. In 1886, Celina contained three newspaper offices, five churches, and two banks. Numerous manufacturing establishments existed in the community, most of which provided services or products to farmers in the surrounding countryside. This has held true to today. In 2000, Celina was the largest city in Mercer County, with a population of 10,303 people.

Celina's first waterworks department had its beginnings in 1894, when a $50,000 bond issue was sold to finance our first water pumping station, wells, and main. The pumping station was located on West Touvelle Street in 1895, and equipped with boilers and engines to provide the motive power for pumping. A pressure regulating standpipe was erected on the property and a water main, made of wooden pipes, was laid to the business section of town. The first well, drilled on November 19, 1894, was followed by five more production wells over the next few years. In 1920, the Water Department acquired a new field south of Beaver Street and west of the Cincinnati & Northern R.R. Two wells were developed at this site and were equipped with electric driven pumps.

Over the years the distribution grid was gradually expanded, fire hydrants were installed, and the plant faithfully served the community with untreated ground water. In order to improve the water distribution pressure, a contract was awarded to the Chicago Bridge & Iron Company on February 12, 1930 to build a 400,000 gallon elevated water storage tank.

On July 11, 1945, due to the groundwater high mineral content of sulphur and iron, the City purchased the site of the current water treatment plant. Finkbeiner, Pettis & Strout, Limited, Consulting Engineers of Toledo, Ohio were commissioned to submit an engineering report and to design a water filtration plant and pumping station on this property. Contracts were awarded on September 1, 1950 for the construction of a modern water filtration and treatment plant which uses water from the ample supply of Grand Lake. Full treatment of the water is accomplished in this plant which had a rated capacity of 1.5 million gallons per day. The plant was built and equipped at a cost of $450,000. Treated and filtered water was turned into the mains on February 25, 1952 and the ground water wells were abandoned.

In 1962, the City of Celina and the County Commissioners entered into an agreement to connect the East Jefferson District area to the City's water system. A 250,000 gallon elevated water storage tank was constructed on Grand Lake Road and connected to the Touvelle Street Tower by a 16 inch water main. This tower was over thirty feet taller than the Touvelle Street Tower and

was filled by one of two 650 gallon per minute pumps located in a building below the tower. In order to control corrosion, liquid polyphosphate is added to the water entering the tower.

Finkbeiner, Pettis & Strout, Limited was commissioned again in 1969 to submit a report to upgrade the water distribution system. A master plan was developed to insure the timely extension of the water mains. Several thousand feet of 6-inch local water mains were installed between 1972 and 1975. In addition, six thousand feet of 20-inch water main was installed to connect the water treatment plant and the elevated storage tank at Touvelle and Orchard Streets.

A contract was awarded on June 18, 1973 for the purpose of expanding the capacity of the existing water treatment plant from 1.5 MGD to 3.0 MGD. The total contract cost was $1.5 million. Included in this expansion were two up-flow Walker Process Clarifiers, a recarbonation basin, and two additional sand filters.

In 1990, new tower level control equipment was installed to transmit the tower levels to the water treatment plant. These are used to automatically control the operations of the three high service pumps at the plant and two East Jefferson Tower fill pumps. Flow meters, chart recorders, and an alarm system were also added at this time.

In 1994, the City began construction of a dual ozone / peroxide treatment system for controlling taste and odor problems, which the old powder activated carbon was not eliminating. This system consisted of a pre-ozone contactor, an intermediate contactor, two power supply units, two ozone generators, an oxygen tank, liquid carbon dioxide tank for recarbonation, new flow meters, and various related equipment. This expansion cost approximately $1.5 million.

From 1999 thru 2000, all four sand filter underdrain systems and filtering media were replaced. Two years later a filter monitoring system was added as required by the OEPA. This system trends filter operating parameters including. (rate-of-flow, loss-of-head, filtering hours, turbidity, and valve positions)

In 2004, a new 1.5 million gallon Landmark composite type tank was completed, at a cost of 1.8 million dollars, replacing the 1930's Touvelle Street 400,000 gallon water tower.

2008 brought a new Granular Activated Carbon (GAC) Facility addition to the water treatment process and new sand filter control valves. The $7 million dollar project (engineering, pilot testing, and construction cost) is funded thru a meter size based payment schedule over twenty years. Floyd Browne Group, Metcalf & Eddy, and The GAC absorbs organic compounds dissolved in the water that react with chlorine to form disinfection by-products. Once the carbon has absorbed all of the organics that it can hold, the carbon is replaced. The filter control project replaced 1952 and 1975 filter control valves and has allowed for some automation additions.

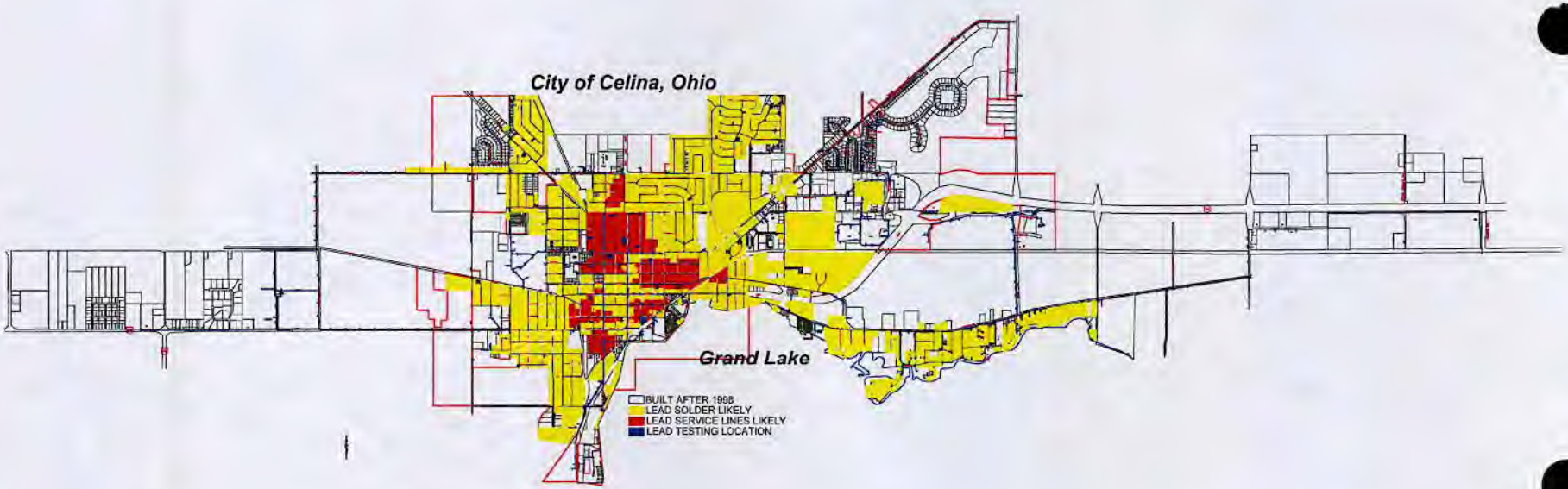
From 2015 to 2017, additional changes were made to the treatment plant and distribution system. A liquid lime system was installed to replace the 1974 pebble lime slakers. The 250,000 gallon East Jefferson Water Tower was replace with the 1.0 million gallon Industrial Park Water

Tower, also a Landmark composite type tank design. The VFD controlled high service pumps and one pressure zone system allows for a one and a half days' supply of water in the air for emergencies. The 1994 ozone system and diesel generator were replaced, further updating the treatment facility.

As of 2017, the water distribution system consists of about 80 miles of water lines, which holds an estimated 950,000 gallons of water. There are approximately 770 fire hydrants and 1,180 valves in this system. The current population served by this system, City of Celina and East Jefferson District, is 11,682. This population is served by an average of 4,775 service connections.

Mercer County's GIS Viewer was used to determine building construction ages. Past Water Department records do not show when lead service lines were installed, repaired, or replaced. Current practice, utilizing Mobile 311 (Facility Dude) software and our current GIS water distribution mapping, is to replace all lead found during water main replacement projects or repairs from the water main to the curb stop or meter pit. Talking with past water distribution employees, this has been the practice for the past 30+ years. This software package will provide searchable water system records.

The attached map is color coded to show where lead service lines would have been installed by their construction date or found during waterline repairs, where lead solder would have been used, where homes built after 1998 are located, and current testing locations. See map for color codes. Mapping will be updated annually for OEPA review during sanitary surveys.



Buildings in Ohio built prior to 1998 or that use plumbing material or solder manufactured before 1998 may have materials with greater than 8% lead and are at a higher risk of contributing lead to the drinking water than materials manufactured after 1998. In addition, buildings built and plumbing materials manufactured after 2014 were required to have less than 0.25% lead by weight and have the lowest risk for contributing lead to the drinking water. It should be noted however that, although prohibited, some use of leaded solder or leaded components may have occurred after the prohibitions became effective.

City of Celina, Ohio