



MEMO

TO: Utilities Committee

FROM: Paula Vandehey, Director of Public Works *PAV*

DATE: February 13, 2020

SUBJECT: **AquaDuscope Measuring Method Program.**

The City of Appleton has been working to address Inflow and Infiltration (I/I) into our sanitary sewer system for over 30 years. All of the major cross-connections and leaking sewer mains that we are aware of have been addressed. However, the amount of clear water (I/I) getting into the sanitary sewer system continues to be significant, and at times, creates challenges at the Waste Water Treatment Plant.

The City currently televises approximately 11% (35 miles) of our sanitary sewer system annually in an attempt to identify areas of I/I. Locations identified are then added to our 5-Year Capital Improvement Program to be addressed accordingly. Recently the City has implemented a sanitary lateral replacement program where we replace approximately 40 private laterals from the sewer main to the home.

A new technology that is now available to us is the AquaDuscope Measuring Method Program. The company that invented this leakage detection system (Aquapriori) is located in Finland. Last year they performed their first ever demonstration project in the United States in Ashland, Wisconsin. They helped that community identify several "hot spots" which were then isolated and fixed accordingly, reducing the overall I/I in that community.

Aquapriori will be coming to Appleton this spring to use the AquaDuscope Measuring Method on the area shown on the attached maps, which includes 11 miles of sanitary sewer main and one lift station. While here, they will train staff to continue the measuring in other areas of concern using this method.

We are excited to utilize this new technology to help us identify locations of I/I, and will keep the Committee updated on what we discover.

Attachments

City of Appleton I/I Overall Sewer Basin Ratings 2012 - 2016

Water Quality
 The City of Appleton's water quality is monitored through a network of sampling stations. The data is used to assess the health of the water supply and to identify areas where treatment is needed.

Water Treatment
 The City of Appleton's water treatment plant is located in the center of the city. It uses a variety of processes to remove impurities from the water, including filtration, coagulation, and disinfection.

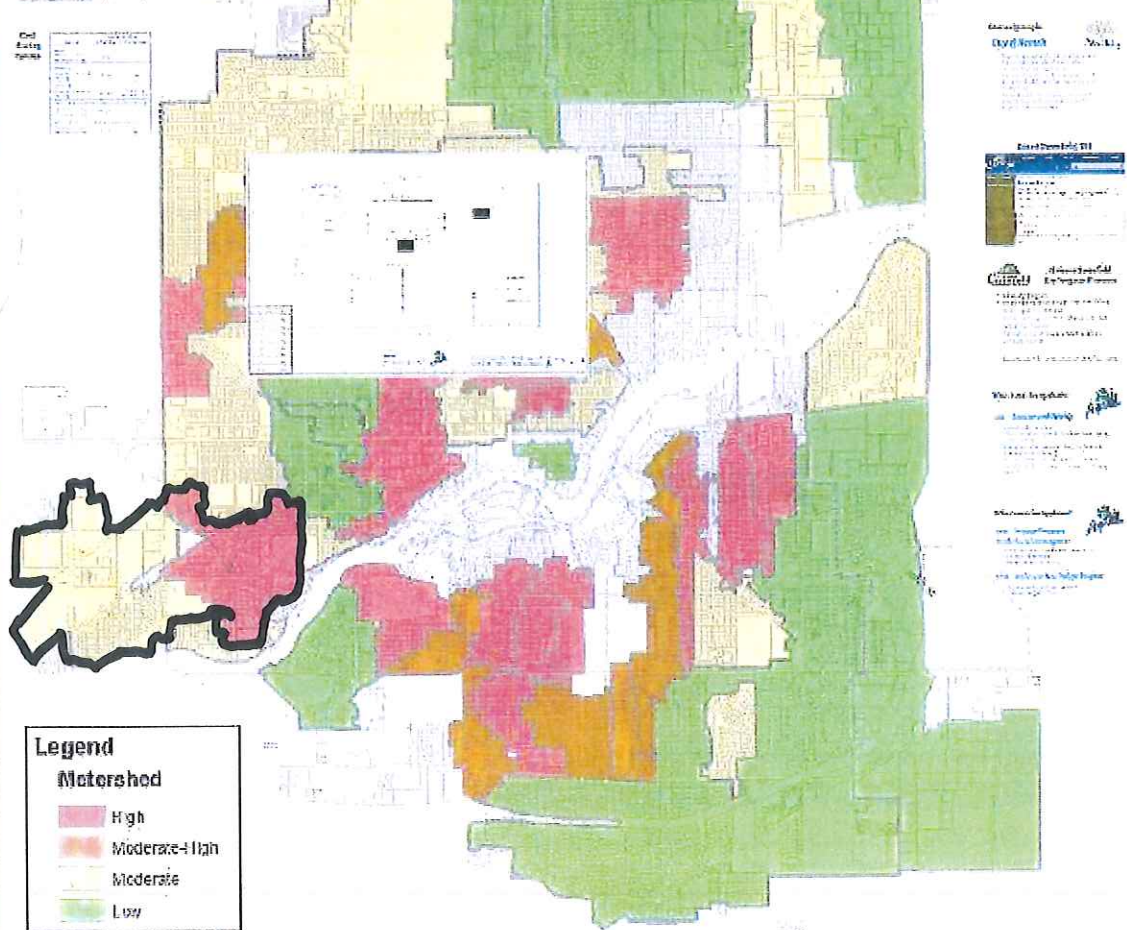
Water Distribution
 The City of Appleton's water distribution system is a network of pipes and valves that deliver water to homes and businesses throughout the city. The system is regularly inspected and maintained to ensure that water is delivered safely and reliably.

Water Conservation
 The City of Appleton encourages residents to conserve water by using water-saving devices, such as low-flow toilets and showerheads, and by fixing leaks promptly.

Water Billing
 The City of Appleton bills residents for water usage based on a tiered rate structure. This encourages conservation and provides a fair rate for water usage.

Water Emergencies
 The City of Appleton has a 24-hour emergency line for water-related issues, such as leaks and outages. Residents can call the line for assistance and to report problems.

11 Miles
 1 lift station



Legend

Metershed

- High
- Moderate-High
- Moderate
- Low



2012-2016 Flow Monitoring I/I Quantification Overall Priority Ratings



Aqua Duoscope 2020 Study Area

-  Sanitary Main
-  Sanitary Study Area
-  measuring point
-  checkpoint

