



2020 Drinking Water Quality Management Report

Purpose of Water Quality Report

The purpose of this report is to provide Council, and decision makers, with an annual update on the status and overall health of the City of Cambridge Drinking Water System along with a summary of the operational activities undertaken in 2020.

The City's water system meets or exceeds all requirements defined by the Safe Drinking Water Act.

System Growth

Cambridge Distribution System Description

- 587 km of water mains (587 in 2019)
 - 498km City – 56.8km Region – 32.1km shared
- 3654 public fire hydrants (3471 in 2019)
- 5403 valves (5126 in 2019)
- 40,395 service connections (40,271 in 2019)
- System is divided into 5 pressure zones
- Overall, minor system growth

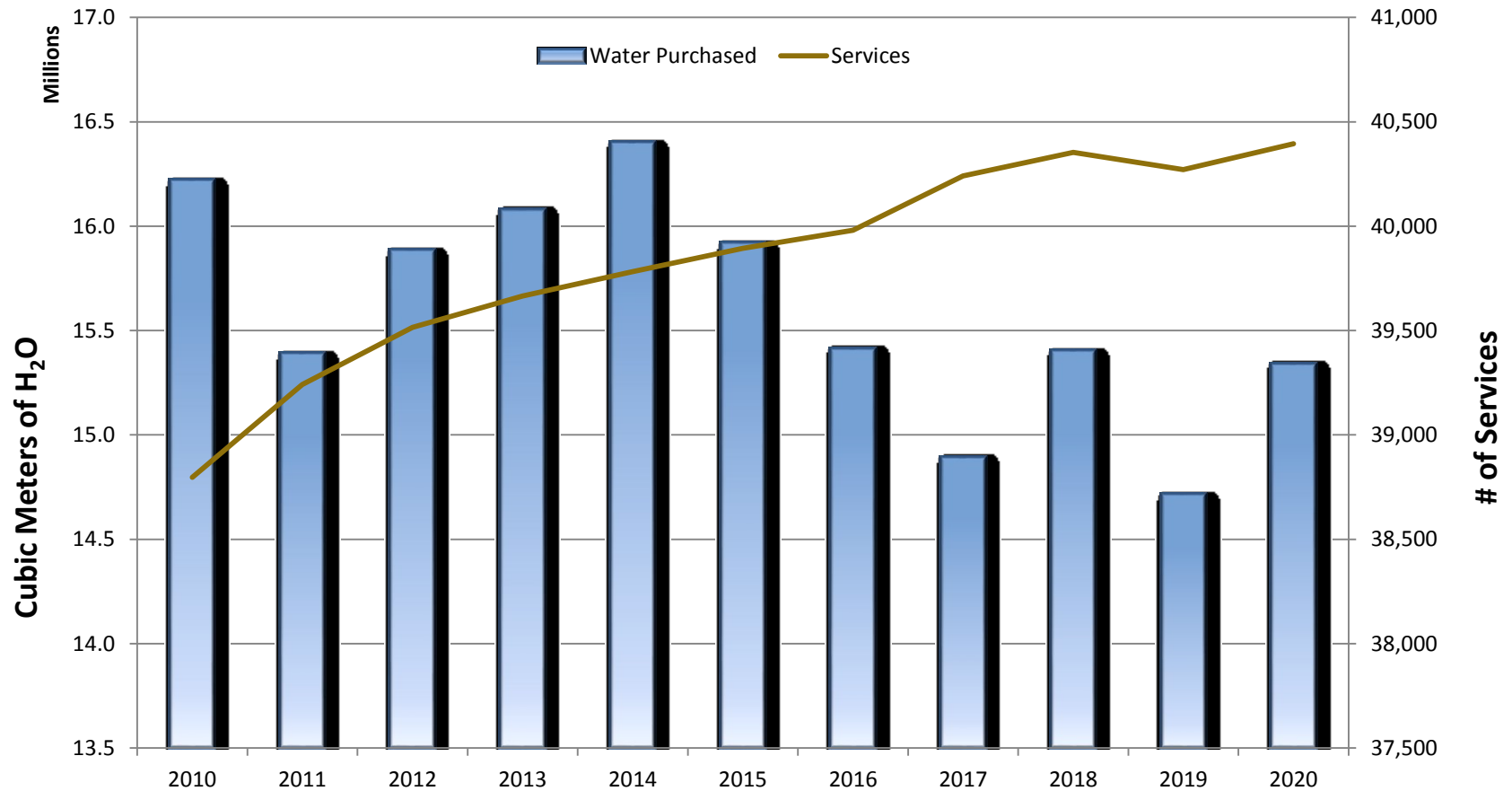
2020 Consumption

Volume of Water Conveyed from Region of Waterloo Supply System to the Cambridge Distribution System

	2020 Monthly Total (m3)	2020 Average Day (m3)	2019 Monthly Total (m3)	Variance from Previous Year
JANUARY	1,318,660	42,537	1,240,397	6.3%
FEBRUARY	1,189,314	41,010	1,113,990	6.8%
MARCH	1,232,056	39,743	1,182,970	4.0%
APRIL	1,135,477	31,849	1,133,739	0.2%
MAY	1,280,274	41,299	1,230,031	4.1%
JUNE	1,379,792	44,509	1,248,404	10.5%
JULY	1,532,057	49,421	1,334,107	14.8%
AUGUST	1,425,441	45,981	1,356,855	5.1%
SEPTEMBER	1,292,266	43,075	1,259,996	2.6%
OCTOBER	1,266,458	40,853	1,247,363	1.5%
NOVEMBER	1,092,662	36,422	1,169,256	-6.6%
DECEMBER	1,195,552	38,566	1,196,523	-0.1%
Total	15,340,009	41,272	14,713,631	4.3%

Note: Volume information taken from invoices submitted by the Regional Municipality of Waterloo

Consumption/Growth



Water Purchased vs Number of Services - City of Cambridge

Annual Inspection

Ministry of Environment, Conservation and Parks Inspection Details

- Ministry performs inspections every 6-12 months on all water systems to test their compliance with Ontario Regulation 170/03 (Drinking Water Systems)
- Cambridge was inspected in February 2021 and received a perfect score with zero non-compliance issues.
- Cambridge has received a perfect score for the past 6 consecutive inspections.

Operational Expenses

Major Operational Expenses Incurred

- Water Connection Maintenance: \$ 2,380,000
 - Watermain Maintenance: \$ 798,000
 - Hydrant Maintenance: \$ 522,000
- Overall 2020 budget to operate the Cambridge Drinking Water System was \$37,126,100.
- Budget allocation for 2021 is \$37,516,100.
- Operational savings and efficiencies were found allowing same water rates for customers. The Region of Waterloo has also maintained same water rates for the City's bulk purchases for 2021.

Sampling/Testing

Bacterial and Chemical Testing

- 1589 bacterial tests
- 840 chlorine residual tests
- 212 other required samples
- Of the 2641 samples, only 4 required follow-up sampling.
 - * All 4 follow up samples were flushed, resampled and resolved without further incident.

Lead Testing

- Two rounds of lead testing performed in 2020 (January to April and June to October)
- 112 private plumbing samples collected with only 1 result exceeding the provincial standard (10 micrograms/L). Follow up notification with resident provided.
- 28 samples collected from the distribution system, resulting in no exceedances.

Water System Update

Legislation Update

- Update to Ontario Disinfection Procedure made available in August 2020.
 - Backflow device specific requirement and testing
 - Who can take samples/test
 - Connections within busy intersection exemptions

- No notable changes to:
 - Drinking Water Systems Reg. 170/03
 - Operator Certification Reg. 128/04
 - Some changes proposed in 2021 for licensing requirements during emergency declarations
 - Drinking Water Quality Management Standard
 - Financial Plans Reg. 435/07

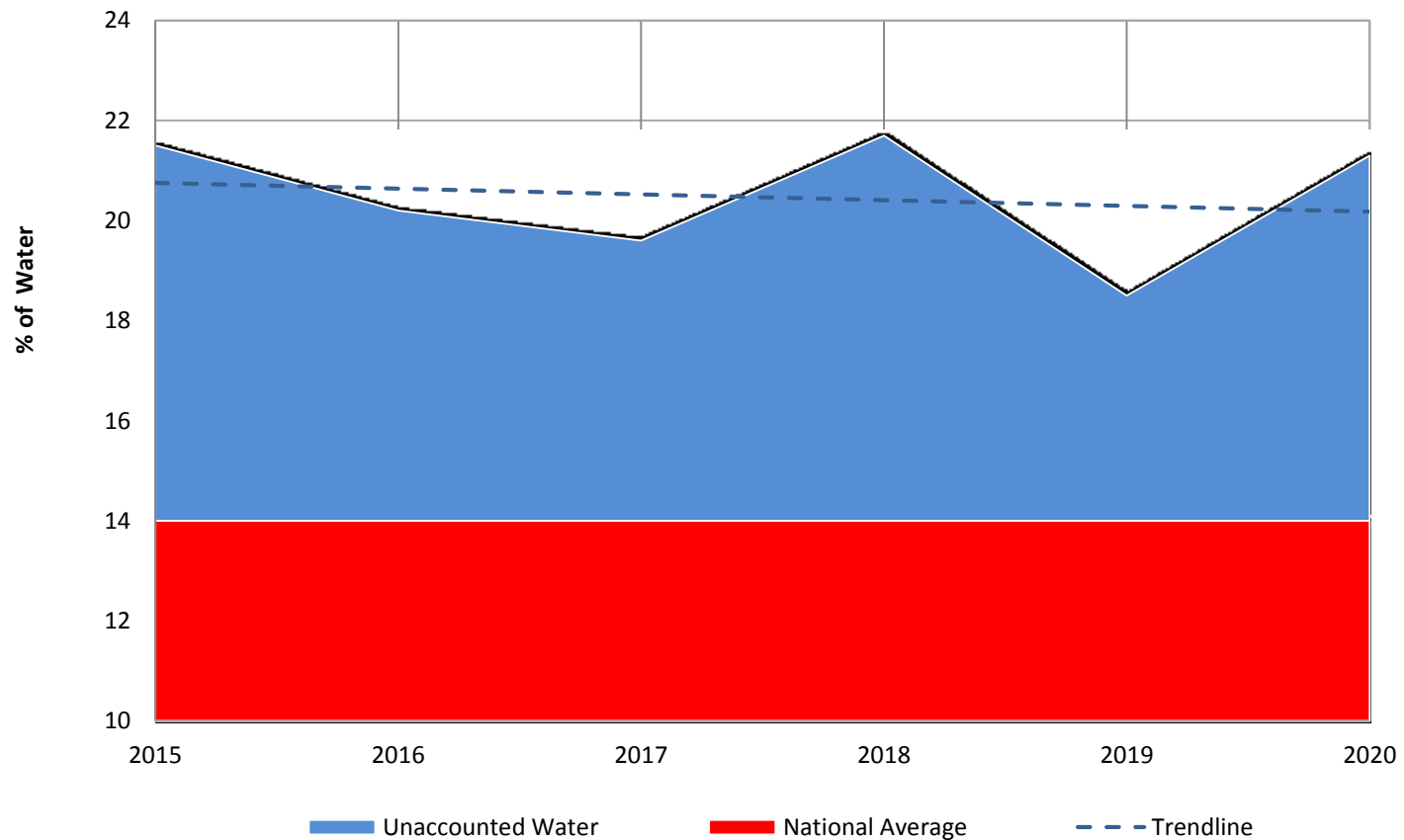
Water System Update

Maintenance Milestones

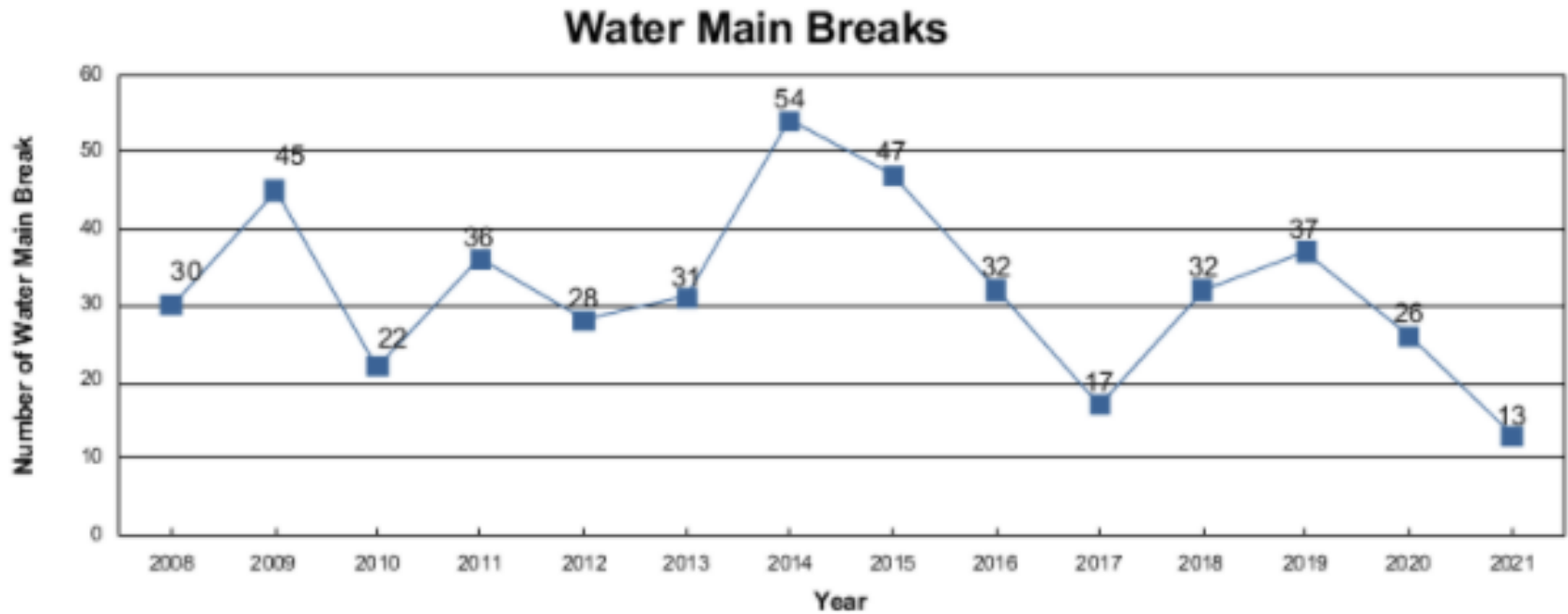
- 873 valves exercised
- 3564 hydrants checked/maintained
- Sewer Locates 3343 (27marked) Water Locates 3292 (1490marked)
- Dead-end Flushing turned over 1300m³ of water
- 13 service valves repaired
- 1463 leak loggers deployed

Water Loss Update

Cambridge Water Loss

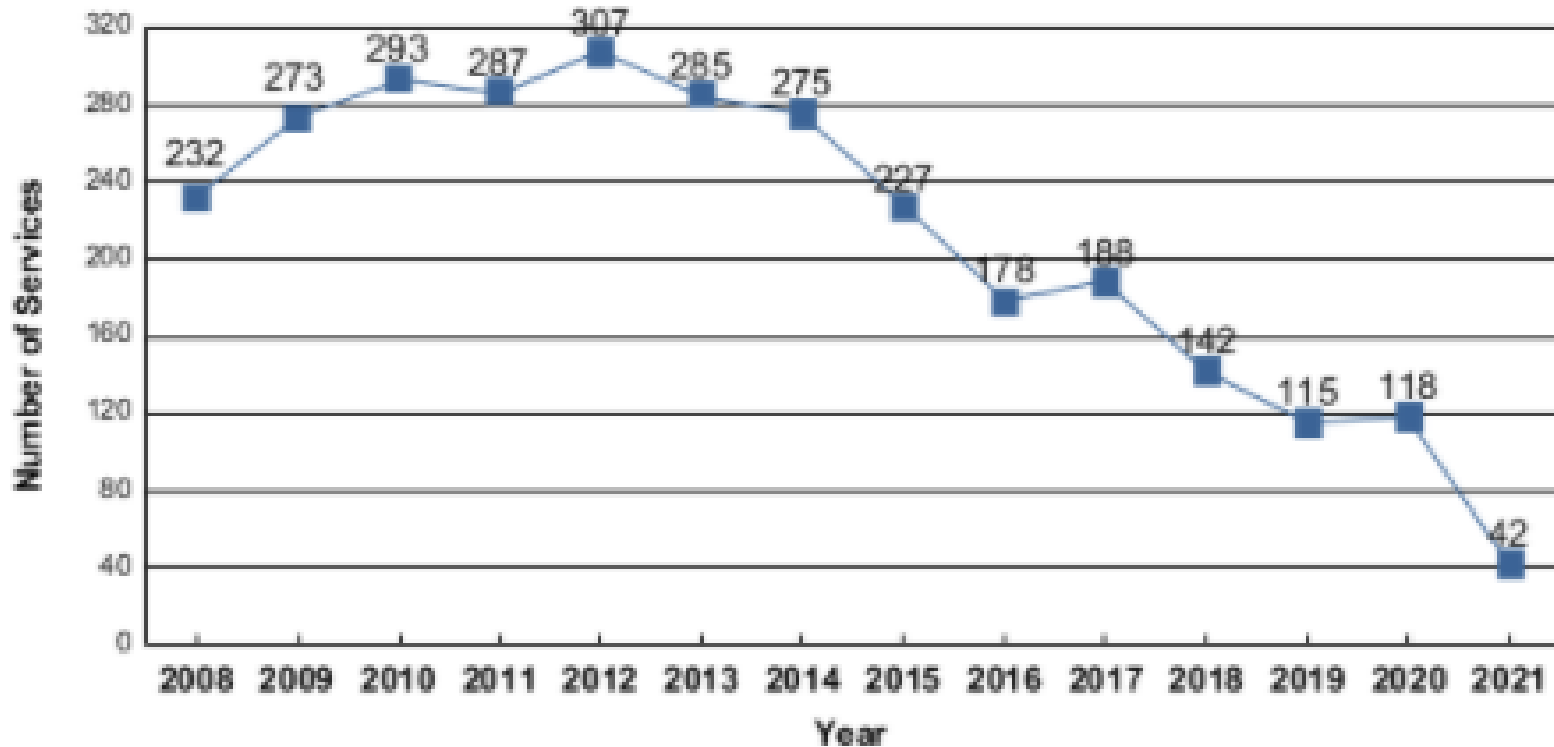


Watermain Breaks

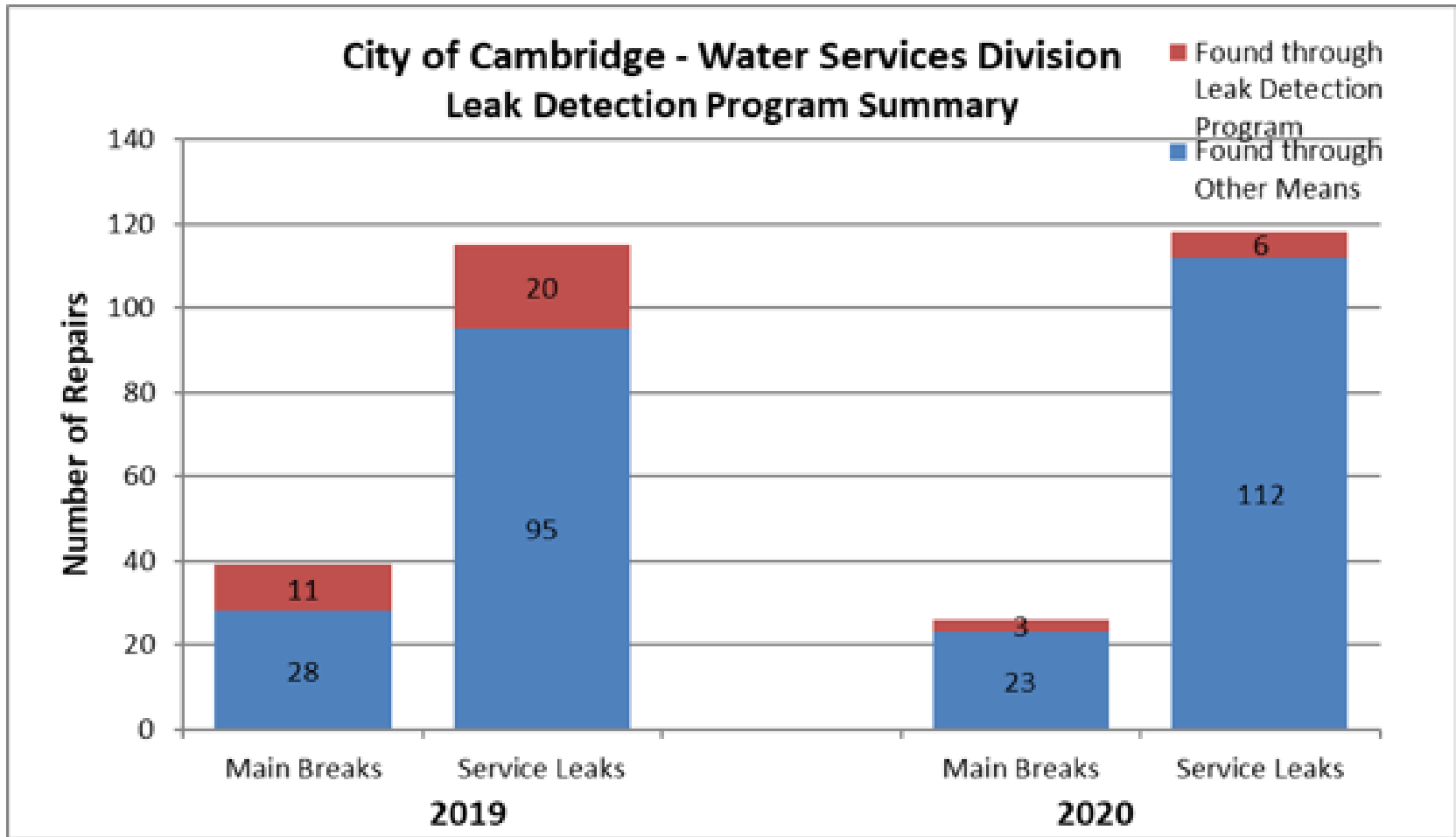


Water Service Failures

Water Service Repaired / Replaced



Leak Progress



Quality Management

Quality Management System highlights from 2020

- Internal Audit February of 2021 for 2020
 - 1 non-conformance relating to timing of the internal audit
 - 8 opportunities for improvement
- External Surveillance Audit November 2020
 - 0 non-conformance
 - 3 opportunities for improvement
- Risk reviews were performed in relation to the COVID-19 pandemic and specific contingency protocols were created to maintain Public Health requirements and Water Operations.

2021

Items for 2021

- Continued AMI installations at 48% installed at time of the report.
- Continued efforts in leak detection.
 - New loggers purchased in 2021
 - Double number of logger deployments to 2800
- Installation of additional District Meter Area.
 - Target of one DMA a year installed
- Addition of another Bulk Fill Station.
 - 131% increase in usage in 2020.
- Return of the Flushing Swabbing Contract for additional cleaning of watermains.
- Assisting with 10 City/Region water projects
 - 7 City 3 Region

Thank you

QUESTIONS?

CONTACT INFORMATION

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