

Water distribution

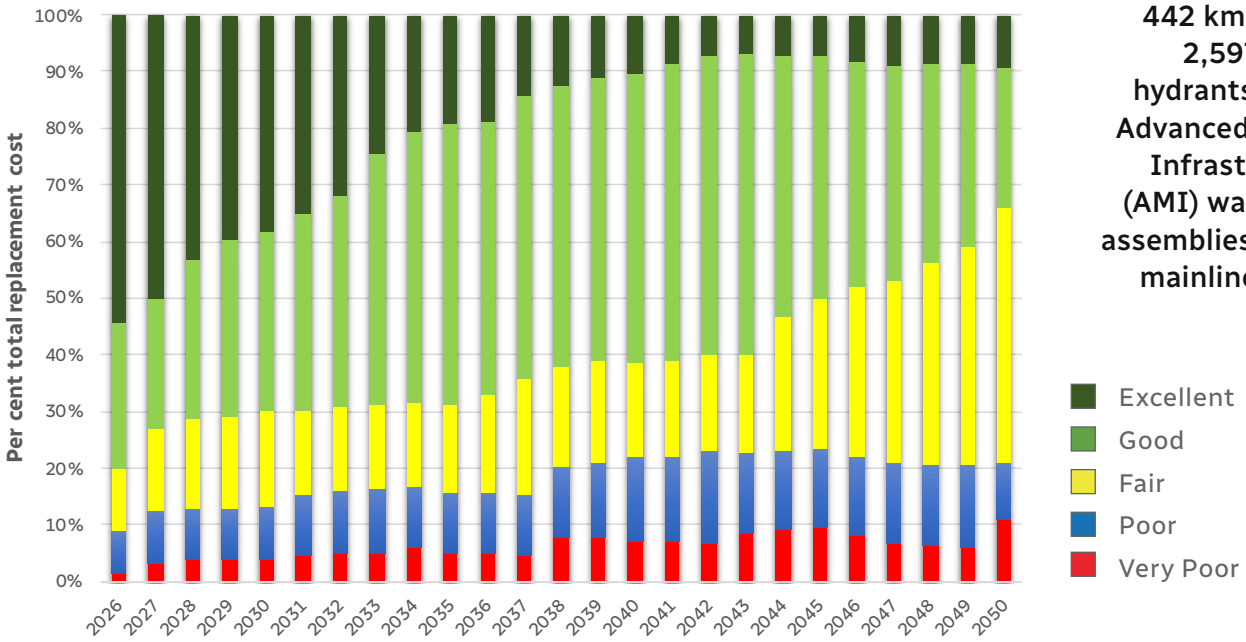
Total asset replacement value	**$786.6 million**
Current condition	**GOOD**
Projected condition in 25 years	**FAIR**
Annual funding needed to meet target performance	**$5.3 million**
Annual average funding	**$5.3 million**
Annual funding gap	**$0**
Funding source	**Water user fees**
Data maturity level	**High**



Annual funding needed $5.3 million

Assets include 442 km of pipe, 2,597 fire hydrants, 31,521 Advanced Metering Infrastructure (AMI) water meter assemblies and 5,112 mainline valves.

Projected annual performance of water assets



A FEATURED STORY

Supporting reliable water distribution service

The City of Waterloo continues to invest in water distribution infrastructure, monitoring technology and maintenance programs to support reliable water service across the city. Advanced Metering Infrastructure (AMI) improves the accuracy and efficiency of water use data collection while helping identify unusual consumption patterns and potential leaks earlier.

Regular inspection and maintenance of fire hydrants, water valves etc. also supports system reliability, operational performance and emergency response capabilities. Over the past three years, the City has increased its valve inspection and valve turning program achieving approximately 25 per cent of the valve inventory inspected to date.

CURRENT STRATEGY



The City's water distribution assets are 2,597 fire hydrants and the 442 km of watermains that transport clean water to our homes and businesses. This involves managing a reliable water system capable of providing sufficient quality, flow, and pressure to satisfy drinking, recreational, irrigation, fire protection, and business needs. Treated drinking water is purchased from the Region of Waterloo and distributed to the community by the City of Waterloo. The Region of Waterloo manages all water treatment plants and sells the treated water to the lower-tier municipalities within the Region, like the City.

Water distribution is a highly regulated service, and the City of Waterloo must meet strict provincial regulations and drinking water quality standards. Water distribution is a user fee funded asset.

Watermains can either be rehabilitated or replaced. The City of Waterloo replaces watermains that experience a high number of breaks, or that have reached the end of their useful life. Watermain work is coordinated with other necessary replacement work on sanitary or stormwater sewers and road reconstruction. The estimated service life for watermains ranges between 50 and 85 years depending on the material type (e.g. cast iron, polyvinyl chloride) and 50 years for fire hydrants. In addition to replacement, the City utilizes rehabilitation methods such as watermain lining on selected assets to extend the service life and defer full replacement where appropriate.

ASSET PERFORMANCE

Water distribution asset performance is evaluated using historical knowledge, age, and observed conditions. The quality and availability of our asset data (data maturity) are continuously evolving. The current data maturity level for water distribution assets is assessed to be high. The city is continuously working to improve asset data quality.

Approximately 91% of water distribution assets are in fair or better condition. Over the 25-year timeline, we anticipate the percentage of our water network with a fair or better performance profile to decreased from 91% in 2026 to around 79% by 2050. Based on the best available water asset data, deterioration rates and 2024-2033 capital funding, we estimate that water assets are sufficiently funded.



Water distribution assets with a fair or better performance

LEVELS OF SERVICE

The following tables show the levels of service established by the city for water distribution assets. These metrics include the technical and community level of service required as part of the Ontario Regulation 588/17. Service metrics are reported for the prior year ending on December 31.

COMMUNITY LEVELS OF SERVICE

The following table outlines the qualitative descriptions that determine the community levels of service for water distribution assets.

SERVICE ATTRIBUTE	QUALITATIVE DESCRIPTION	2025
Scope	Description, which may include maps, of the user groups or areas of the city that are connected to the municipal water system.	The City of Waterloo is largely built out to the municipal boundary, and provides drinking water to most properties within the urban areas while a small portion of the rural areas are serviced by private wells.
	Description, which may include maps, of the user groups or areas of the city that are connected to the municipal water system.	A vast portion of the built out municipality has access to municipal drinking water and in turn adequate fire flow.

SERVICE ATTRIBUTE	QUALITATIVE DESCRIPTION	2025
Reliability	Description of boil water advisories and service interruptions.	A boil water advisory is issued when contaminants are detected in the water supply and present an immediate public health threat. This excludes pre-cautionary advisories due to operational activities to maintain service. A service interruption is a result of a failure in the city managed water distribution system and excludes planned interruptions.

TECHNICAL LEVELS OF SERVICE

The following table outlines the quantitative metrics that determine the technical level of service for water distribution assets.

SERVICE ATTRIBUTE	QUANTITATIVE METRICS	2024	2025
Scope	Per cent of roperties connected to the municipal water system	99.57%	99.54%
	Per cent of properties where fire flow is available	99.82%	99.83%
Reliability	Number of connection days per year where a boil water advisory notice is in place, compared to the total number of properties connected	0%	0%
	Number of connection days per year due to water main breaks compared to the total number of properties connected to the system	1.48	1.29

The information presented here is based on the best available asset inventory and condition data as of March 2026, as well as funding details from the 2024-2026 approved capital budget and the 2027-2033 capital forecast.

The forecasting model allows staff to project the condition of City assets over a 25-year timeframe and therefore all funding is based on a 25-year average.