

Opportunistic Watermain Inspection and Sampling Protocol

Continually aging buried infrastructure is adding pressure on municipalities to develop more comprehensive asset management plans to efficiently manage future capital funds for infrastructure maintenance. The City of Hamilton has been actively developing and maintaining a critical watermain infrastructure management program for the past 11 years. There have been many condition assessment tools utilized to obtain physical data to plan future capital projects with more confidence. One of the outcomes of the watermain management program was the development of an opportunistic watermain inspection and sampling protocol. The largest cost of physically inspecting a watermain is the associated excavation works. The purpose for initiating the watermain inspecting protocol was to take advantage of events where the pipe is already exposed and “piggybacking” onto the primary project to inspect the pipe at a substantially lower cost. When a trunk watermain is exposed throughout the City of Hamilton for maintenance or capital purposes, a consultant has been engaged to assess the overall surface of the exposed pipe and obtain backfill and bedding soil samples. Laboratory testing of the soil samples have been performed for corrosion analysis which allowed the City to determine the type of environment the pipeline is buried to. If a portion of the watermain required removal as part of the primary work, a sample of the watermain has also been acquired for lab tests. This information has been valuable in determining the remaining lifespan of the assets.

Since the inception of the opportunistic watermain inspection protocol, based on the opportunity, the City and RCI have visited and collected soil and watermain samples at eighteen (18) different sites on nine (11) major trunk watermains. The results from the inspection reports for each site have provided valuable information and assisted in the City's watermain management plan. The outcomes from each site inspection have allowed for the city to prioritize their asset management funds in a more efficient manner. The vision for the future of this program is to continue performing opportunistic inspections so that the results of the backfill and bedding analysis can be mapped to visually present areas of highly corrosive soils. RCI has conducted an assessment in comparing and summarizing the results obtained from the site inspections performed to date. This presentation will discuss the findings from these inspections and elaborate how the data obtained have been reported to the City in management of critical watermains.