

Environmental Mitigation within Mimico Creek Ravines with CIPP

As part of Toronto Water's proactive asset management program, numerous sewers are planned to be rehabilitated using trenchless technologies. As a result of this program, both North Mimico Sanitary Trunk Sewer (STS) and South Mimico STS were recommended for rehabilitation based on their deteriorating condition.

In 2018, the City of Toronto completed rehabilitation of North Mimico Sanitary Trunk Sewer (STS). The North Mimico STS section included approximately 360 m of 1,200 mm to 1,350 mm diameter trunk sewer between MH325-020-1 and MH325-017-1, including all MHs. The sewer is located in Echo Valley Park, cross Kipling Avenue and continue through existing permanent easements in Islington Golf Course and off of Bywood Drive.

In 2019, the City of Toronto completed rehabilitation of the 600 mm to 900 mm diameter South Mimico Sanitary Trunk Sewer (STS), located within City Parks and the Mimico Creek ravine, passing through several private properties, HydroOne corridor, and a residential road. Of the 2,000 m of sewer and 29 maintenance holes rehabilitated, 1,320 m of sewer and 20 maintenance holes were located within the densely forested Mimico Creek ravine. This sensitive location posed numerous constraints and challenges during design and construction including limited access to the site due to topography, six river crossings and private properties with permanent easements.

During the preliminary design stage, a cost-benefit analysis was completed to compare rehabilitation and replacement of the sewer. While the cost-benefit analysis included criteria such as technical feasibility, hydraulic capacity, property and social impacts, and overall cost, the environmental impacts of each option were heavily scrutinized. As there was no established access pathway through the dense forest to the maintenance hole locations, rehabilitation required a temporary access road, extensive tree removals, and temporary bridges and a submerged bypass crossing of Mimico Creek. Based on review input from concerned stakeholders, the project team incorporated mitigation measures into the design and the overall project schedule.

Given the high degree of project complexity combined with the high impact on the environment and surrounding community, the project team adopted cured-in-place pipe, a less intrusive and cost-effective rehabilitation method.