

CASE STUDY

MONTREAL CPP WATER MAIN RELINING

Cured-in-Place pipe installation provides fully structural rehabilitation for aging pressure pipe beneath railway

THE CHALLENGE

Recent failures of aging pre-stressed concrete pipes across North America have underscored the urgency of preventative rehabilitation. Minor defects can destabilize and erode soil, leading to voids and sinkholes, while larger breaks in concrete pressure pipes (CPPs) often result in major localized flooding, damaging nearby structures and utilities.

With these risks in mind, a 30-inch, pre-stressed CPP in the City of Longueuil on the South Shore of Montreal, Canada, was identified for preventative rehabilitation. Used for potable water, the section in question was 150 feet long and designed to operate at 125 psi.

The pipe's original design parameters included Cooper's E90 live load for railway, as it runs beneath a critical train route. Any rehabilitation would need to meet these specified operational pressure and load design requirements, and the work could not significantly disrupt railway schedules.

Additionally, the pipe's proximity to the St. Lawrence River presented additional environmental concerns.



The liner installation portion of the work was completed in only five days.



PROJECT SNAPSHOT

PROJECT

Hyprescon Water Main CIPP Installation

PROBLEM

A 30-inch, pre-stressed CPP water main was nearing the end of its service life. The line's location beneath a railway and proximity to the St. Lawrence River created unique load design requirements and eliminated open-cut replacement as a viable rehab option.

CONTRACTOR

Foraction Inc.

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VORTEX PRODUCTS USED



CIPP H₂O

A fully structural pressure pipe Cured-In-Place Pipe Liner from United Felts, A Vortex Company.

CASE STUDY

THE SOLUTION

These logistical and environmental considerations eliminated traditional open-cut replacement as a rehab option. Trenchless methods, and more specifically Cured-in-Place pipe (CIPP) lining, was identified as an ideal solution for extending the pipe's service life. CIPP rehabilitation promised a faster return to service and less impact on railway operations, all at a lower price point than dig and replace.

An H₂O, fully structural pressure pipe Cured-In-Place Pipe (CIPP) liner was installed using inversion. The liner was supplied by United Felts, a Vortex Company, and Foraction Inc. managed the installation.



The pipe's location beneath a rail line added higher operational pressure and load design requirements.



Project completion through CIPP required only minimal excavation, reducing costs and ensuring a faster return to service.



IMPACT

1

The fully structural water main repair added 50+ years of service life.

2

Liner installation work was completed in only five days, with minimal disruption to the rail line and waterways.

3

CIPP rehabilitation was significantly more cost-effective than open-cut replacement methods.

THE RESULTS

The new liner extended the asset's life by a minimum of 50 additional years, ensuring reliable water service and mitigating the risk of catastrophic pipe failure.

The project required only a small amount of excavation, preserving the existing infrastructure and reducing environmental impact. The liner installation portion of the work — which included pipe cleaning, pre-lining CCTV inspection, liner installation, pressure testing, and post-lining CCTV inspection — took only five days. From mobilization to final restoration, the complete effort was wrapped up in approximately four weeks.

The contract was completed on budget, with no unexpected claims or costs. The asset owners were satisfied with the final results, the efficiency of the repair, and the significant cost-savings of H₂O CIPP over other rehab methods.