



JOB REPORT



ROBERT STREET BRIDGE CROSSING, SAINT PAUL, MN 16" STEEL CEMENT-LINED WATER MAIN REPAIR

CLIENT:

Saint Paul Regional Water Services

YEAR OF CONSTRUCTION:

December 2024

TYPE OF CONSTRUCTION MEASURE:

Bridge crossing potable water main rehabilitation

OUR SERVICES:

- Engineering review and assessment
- Delivery of Primus materials for installation

SITUATION:

The 16-inch cement-lined water main was constructed in 1990, spanning underneath Robert Street Bridge over the Mississippi River in Saint Paul, MN. In 2024, the water main ruptured due to a combination of freezing and dead-head hydraulic conditions, causing substantial damage to the pipeline, pipe fittings, pipe supports and the concrete from Pier 3 to the South Abutment of the bridge.

The ruptured water main comprised of two sections, the first section spanned 510 feet from Pier 3 to Pier 4, and the second section spanned 250 feet from Pier 4 to the South Abutment of the bridge.

The Primus Line® system was specified by Stantec, the consulting engineering firm, as the optimal long-term rehabilitation solution for its uniquely engineered construction that combines strength and flexibility, while accommodating bridge movements which are constantly imposing stress on the pipeline.



TECHNICAL DETAILS:

Material of Host Pipe:	Cement-lined steel
Transported Fluid:	Potable water
Diameter of Host Pipe:	16 inches
Operating Pressure:	85 PSI
Primus Line® System:	Medium-pressure (MD) Primus Line – DN 400/16”
Total Length:	760 feet (510 feet + 250 feet)
Number of Sections:	Two
Installation Time:	Four days (CCTV inspection, installation and testing)

REHABILITATION SYSTEM:

- DN 400/16” medium-pressure (MD) liner
- DN 400/16” R1 connectors

PROJECT DESCRIPTION:

In mid-November, J. Fletcher Creamer & Son, Inc. (Creamer) coordinated with the general contractor, Minger Construction Co., Inc., to deploy its crew to Minnesota and start the work on December 16th. Concurrently arranging for the Primus Line materials to be directly shipped to the general contractor’s storage facility the week before.

With an expected snowstorm during that week and very cold temperatures averaging only between 21 °F and as low as 9 °F, Creamer utilized blower heaters in the access manholes on the bridge deck and within the access chambers underneath to ensure proper liner installation and resin curing.

Creamer inspected both segments and determined that they were clean and free of any obstructions, then proceeded with pulling the liner through access manholes on the bridge deck using snatch blocks and chain guides inside the access chambers below; successfully completing liner inflation, connectors’ installation, pressure testing and mobilizing out of the job site on Friday morning December 20th.

