

# REHABBING A 150-YEAR OLD WATER MAIN IN THE HEART OF MANHATTAN

## Overview

In 2008 and 2009, United Pipeline rehabilitated more than 10,000 feet of 48-inch water main beneath New York City's Madison Avenue, one of the world's busiest streets. The 150-year old pipe had been out of service for roughly ten years and was in need of an upgrade to be put back into service.

The pipe was rehabilitated using the Tite Liner® system, a high-density polyethylene (HDPE) lining system which can provide a structural solution for pressure pipelines. The trenchless installation process made it possible to rehabilitate the water main line without digging an open trench the entire length of the line. Other solutions would have required a trench 37 blocks long to allow replacement of the old pipeline, disrupting utilities, traffic and businesses at great cost to the commerce and taxpayers of New York City.

Using the Tite Liner® lining system, lengths of HDPE pipe were first welded together using a fusion process. The pipe was then folded and banded in place with plastic straps before being inserted into the existing pipe from an entry pit. After insertion, the folded pipe was filled with water and pressurized until the plastic bands snapped. The new pipe then reverted to its original shape and expanded to form a close-fit with the original pipe. Finally, end fittings were attached to each end of the pipe, the pipe was reconnected to the rest of the system and service was resumed.

The pipeline was rehabilitated from 40<sup>th</sup> Street north to 75<sup>th</sup> Street under the administration of the New York City Department of Design and Construction. Most of the work was completed over 12 weekends in 2008 and 2009 in order to mitigate impact to traffic and New York citizens. United performed the work as a sub-contractor to Halcyon Corporation using both local union labor and United engineers and specialists.



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<b>Project:</b>	Water Main Rehabilitation
<b>Client:</b>	City of New York, New York
<b>General Contractor:</b>	Halcyon Corporation
<b>Host Pipe:</b>	Cast iron water transmission main
<b>Diameter:</b>	48-inch
<b>Length:</b>	More than 10,000 LF
<b>Operating Pressure:</b>	Designed to meet 70 psi
<b>Installation Shots:</b>	12 sections of pipe from 400 LF to 1105 LF



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