

APPENDIX

Cured-In-Place Lining (“CIPL”)

Cured-in-place lining (“CIPL”) is a trenchless rehabilitation method that installs a resin-saturated liner inside existing metallic mains and cures it to form a bonded composite “pipe-within-a-pipe,” eliminating leaks and restoring structural and pressure integrity.¹

Technical capabilities and safety: Starline® CIPL can rehabilitate cast-iron, steel (wrapped or bare), and wrought-iron mains from 2 to 48 inches in diameter, with testing to a maximum allowable operating pressure of 450 psig.² The chemically bonded liner and host pipe form a Class II composite pressure vessel that maintains containment even after significant host-pipe degradation, including corrosion holes up to 6 inches and circumferential gaps up to 3 inches, while preventing gas migration between the liner and the host pipe. Under third-party damage or soil movement, the composite tends to flex and selectively dis-bond rather than crack, keeping the segment pressurized even if the original pipe fails. In practice, this configuration eliminates existing leaks, prevents future leaks from joints and internal corrosion, and maintains structural integrity.³

Constructability and logistics: CIPL is particularly well-suited to Chicago’s hardest locations—bridge, river, and highway crossings; dense urban streets requiring full curb-to-curb restoration; and large-diameter mains where throughput must be maintained, and parallel replacement or downsizing is difficult. Typical capabilities include lining runs up to 800 feet per inversion for 4–10-inch mains and up to 1,200 feet for 12–24-inch mains, with routine traversal of multiple bends. Conventional adhesive cure takes about 24 hours, while emerging UV or hot-air systems are expected to complete the full lining process in 8–12 hours, allowing isolation, lining, cure, and return to service within a single workday under favorable conditions.⁴ By comparison, open-cut main replacement over similar distances in urban streets typically takes multiple days to weeks once excavation, pipe installation, tie-ins, paving, and restoration—plus traffic control and night work—are included.⁵ After the cure, service connections are reopened robotically from inside the main, avoiding separate excavations at each tee⁶.

¹ Progressive Pipeline Management, *Cured-in-Place Lining Comprehensive FAQ*, <https://www.progressivepipe.com/cipl-faq> (last visited Feb. 27, 2026).

² *Id.*

³ *Id.*

⁴ *Id.*

⁵ Progressive Pipeline Management, *Turnkey Solution For Leak Prone Pipe*, <https://www.progressivepipe.com/turnkey-cipl-pp> (last visited Feb. 27, 2026).

⁶ *Supra* note 1.

Lower cost and reduced stranded-asset risk: Citizens Utility Board reported that Peoples Gas’s planned main replacement costs were \$4.8 million per mile in 2019 (256 million to replace fewer than 53 miles).⁷ Replacing gas mains in places like Chicago is expensive, as the work requires digging up streets in dense urban environments. According to a National Grid spokesperson, in 2026, replacing a mile of pipe in New York City costs about \$10 million.⁸ On the other hand, Progressive Pipeline Management’s 2025 pricing for Starline® CIPL shows installed costs of roughly \$276/ft for 4-inch mains and \$618/ft for 24-inch mains.⁹ That translates to about \$1.46 million/mile for 4-inch and \$3.26 million/mile for 24-inch installations. CIPL typically saves 30–60 percent overall in urban, high-restoration, or access-limited areas by avoiding paving, traffic control, and restoration expenses.¹⁰ For Chicago’s large-diameter segments, a 24-inch CIPL installation can save on the order of \$1–\$2 million per mile relative to full replacement, materially lowering the revenue requirement associated with meeting the 2035 CIDI-retirement mandate.

These attributes matter for two reasons. First, **affordability**. By lowering the per-foot cost on the most expensive, hardest-to-access mains, CIPL helps moderate bill impacts compared with an all-replacement strategy while still eliminating leak risk. Second, **stranded-asset risk is reduced**. CIPL rehabilitates existing mains instead of adding new steel or plastic and is most valuable where replacement would be extraordinarily costly, so a lined segment serving declining throughput is less problematic than a brand-new multi-million-dollar main that must be depreciated over decades even as customers electrify. CIPL is not appropriate everywhere—it does not replace external cathodic protection and requires a host pipe with adequate remaining integrity—but where those conditions are met, it offers a technically robust, lower-cost, and lower-disruption alternative to full main replacement that directly addresses methane-emission and safety concerns while improving the economics of Peoples Gas’ pipe-retirement program.

⁷ Steve Daniels, *Peoples Gas Blows the Pipeline-Replacement Budget Again*, CRAIN’S CHICAGO BUSINESS, (Feb. 27, 2019), <https://www.citizensutilityboard.org/peoples-gas-blows-the-pipeline-replacement-budget-again/>.

⁸ Lauren Dalban, *What Happens if New York Buildings Use Less Gas?*, INSIDE CLIMATE NEWS, (Feb. 23, 2026), <https://insideclimatenews.org/news/23022026/new-york-city-natural-gas-reliance/>.

⁹ *Supra* note 1.

¹⁰ *Id.*