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## MILWAUKEE MSD I/I REDUCTION COST-EFFECTIVENESS

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**ABSTRACT:** Many communities struggle with choosing the right path toward infiltration and inflow (I/I) reduction. In many cases, this trepidation results from insufficient local cost-effectiveness data to support choosing a specific approach for I/I reduction. As a result, communities have either selected a direction based on best technical judgment, or done nothing at all. This project represents a third option taken by the Milwaukee Metropolitan Sewerage District (MMSD). Starting in 1999, MMSD initiated an I/I reduction demonstration project. The purpose of the project was to implement I/I reduction projects that would provide conclusive data on effective practices and provide local construction costs. Brown and Caldwell was hired to consult MMSD on establishing project standards, selecting project locations, and performing an effectiveness evaluation of each implemented project.

Once selected, the projects then followed a course of pre- and post-construction flow and rainfall monitoring, conceptual approach, design, and construction. The following trenchless technology methods were ultimately used in the MMSD demonstration project:

- Cured-in-place pipe (CIPP) lining of building sewer laterals with minimal excavation
- CIPP lining with no excavation
- CIPP lining of storm sewers which crossed defective building sewer laterals

The information in this paper will benefit other municipalities that desire to set up their own I/I reduction demonstration projects. This paper will provide the criteria used to evaluate potential project areas, what MMSD did to ensure the effectiveness could be estimated, how the projects were constructed, and conclusions on the cost-effectiveness of I/I reduction for each demonstrated reduction method.