

Flood Grouting for Infiltration Reduction on Private Side Sewers

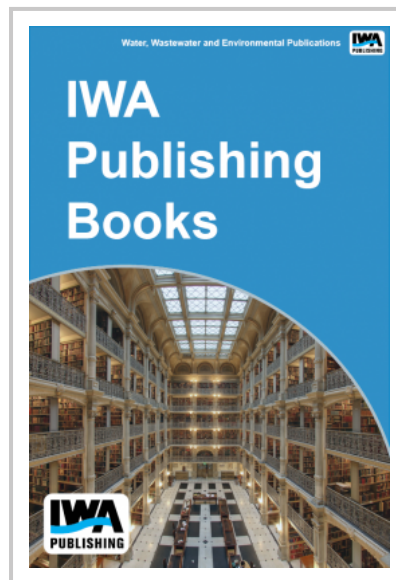
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The sewers in Seattle's Broadview neighborhood, built in the 1950s, experience significant inflow and infiltration. Intense wet weather events have resulted in sewer overflows into private residences and the environment and previous work indicates that the majority of this excess flow comes from infiltration. As a result, an infiltration reduction project was investigated to reduce overflows. To reduce that infiltration and achieve maximum success, all components of the sewer system – mainlines, maintenance holes, and private side sewers – have to be addressed. Seattle Public Utilities determined through a business case that to reduce infiltration, flood grouting was the most cost-effective, least disruptive methodology.

Flood grouting involves applying two chemicals in separate steps to treat an entire section of the sewer system between two maintenance holes, including the side sewers. The segment is filled completely to the maintenance hole rim and utilizes hydrostatic pressure by the chemical fluid to apply the grout to the system.

To determine the success of the project, flow meters were installed in the system to document before and after conditions for modeling analysis. The effectiveness of this approach at reducing infiltration compared to the cost, the challenges associated with working on private property, and lessons learned are documented in this paper.

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