

Best methods and technologies to address defective sewer laterals now accessible in a searchable database

Web-Based Decision Support Tools for Selection of Condition Assessment and Rehabilitation Methods for Laterals (INFR2SG09)

The Central Issue

Since laterals are the connection between the home or business and the sewer main, there are usually dual responsibilities for their management. Wastewater agencies typically are responsible for maintaining the portion of the sewer lateral located in the public right-of-way, and property owners are responsible for the portion of the lateral located on their property. Major issues with laterals involve decisions on replacing or rehabilitating deteriorated laterals, both of which are expensive to all parties.

Deferment of needed rehabilitation translates to an increase in the wastewater agency annual operation and maintenance budget and an increased risk to the property owner. Sewer lateral deterioration leads to pipe collapse and costly sewer backup. Increase in transmission and treatment costs due to inflow and infiltration (I/I) into the public sewer system are inevitably borne by the ratepayer.

A new web portal has been developed to provide wastewater agencies and property owners with up-to-date information on sewer lateral solutions.

Context and Background

This research builds on WERF's previously completed work that studied the cost-effective rehabilitation of sewer laterals. The study was of great interest to cities and municipalities across the country. However, decision-support tools that would guide a designer through the process of making choices about the nature of a lateral rehabilitation project, the condition assessment tools to use, the available rehabilitation techniques, and the engineering design of the rehabilitation method chosen were scattered among various sites and there was no centralized repository for this information.

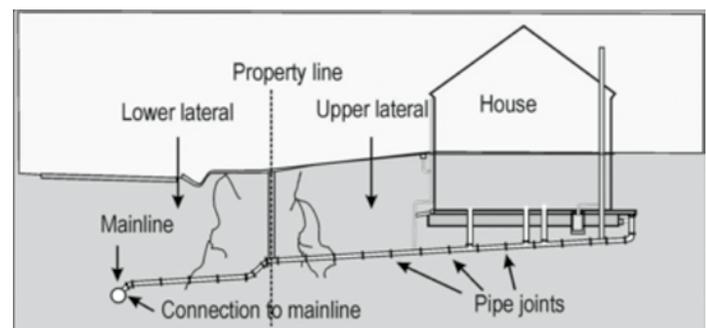


Lateral inspection using smoke testing.

Findings and Conclusions

This research compiled case studies of successful methods and applications, as well as new technologies. The new information was aggregated and placed in a searchable database to provide a concise and informative reference on issues related to defective private sewer laterals. The database includes:

- Brief descriptions of available inspection technologies and construction techniques for rehabilitation of sewer laterals.
- Extensive case studies illustrating where and how the techniques for inspection and rehabilitation have been applied.
- A method selection tool for identifying suitable methods to rehabilitate private sewer laterals in real site conditions.
- Concise reference on how legal and financing issues regarding sewer laterals can be addressed.
- An electronic pegboard to facilitate interaction on this topic among practitioners.



Basic sewer lateral terminology.

Executive Summary



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Management and Policy Implications

This study advanced the capability of decision makers to have relevant information easily available. This web portal should aid directors of public works agencies, city engineers, general managers,

planners, financial managers, and homeowners in having higher confidence in the interventions selected for lateral condition assessment and renewal in their community.

Related WERF Research

Project Title	Research Focus
Methods for Cost-Effective Rehabilitation of Private Lateral Sewers (02CTS5)	Provides a road map to the assessment, analysis, program development, method selection, and legal and financial implementation that make it an easier task to decide how to implement lateral rehabilitation within an overall wastewater system rehabilitation strategy. Provides a clear explanation of problems and relevant issues and available options for inspection, evaluation, and repair of sewer laterals. Addresses the financial and legal issues.
Case Studies: Methods for Cost-Effective Rehabilitation of Private Lateral Sewers (02CTS5a)	Excerpted from the WERF report above, select case studies provide examples of how public works agencies made decisions regarding inspection and rehabilitation of the private lateral portions of their wastewater conveyance system, and include detailed information on how these projects were carried out. Some case studies also cover how the agencies quantified I/I and the effectiveness of its removal, costs and financing issues, and how the agencies handled public relations and legal issues.
Sewer Lateral Electro-Scan Field Verification Plant (INFR4R12)	This study is field testing more than 100 laterals for infiltration-generating defects using the sewer lateral condition assessment tool Electro Scan ES-38 according to ASTM F2550-006. The research will compare these results to other infiltration data produced in rainfall simulation tests of the same laterals. The Electro Scan ES-38 measurements will also be compared to water exfiltration tests of these laterals and to closed-circuit television inspection of laterals according to NASSCO Pipeline Assessment Certification Program (PACP) standards.

Principal Investigator:

Erez N. Allouche, Ph.D., P.Eng
*Trenchless Technology Center,
Louisiana Tech University*

Research Team:

Umesh Dhital, M.S.
Md Ashikul Islam, M.S.
Jadranka Simicevic, M.S.
*Trenchless Technology Center,
Louisiana Tech University*

Technical Reviewers:

Wayne Green
York Region
Yehuda Kleiner, Ph.D., P.E.
National Research Council of Canada
Ariamalar Selvakumar
U.S. Environmental Protection Agency
Mary Strawn
Arlington County Water

Vill G. Villanueva, P.E.
Portland Water Bureau

Andrew Wood, Ph.D., P.E.
City of Port Coquitlam

Medhi Zarghamee, Ph.D., P.E.
Simpson, Gumpertz & Heger, Inc.

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