

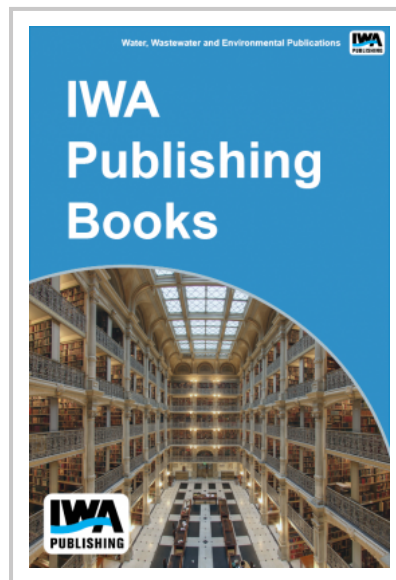
# Cost Information for Wastewater Pipelines: Synthesis Report

The research presented in this report was performed in order to compile and better understand the total costs of some commonplace wastewater pipeline condition assessment and renewal engineering methodologies and technologies in the U.S. An extensive literature review was performed, covering all pertinent sources from the body of knowledge. Additionally, detailed case studies describing utility wastewater pipeline condition assessment and renewal engineering project costs were created using information data mined directly from participating utilities.

The information gathered through literature review and data mining was compiled and synthesized, resulting in the presentation of conclusions regarding the financial, social, and environmental costs of condition assessment and renewal engineering of domestic wastewater pipelines, recommendations for further research and industry needs, and a description of trends found. Trends in costs as driven by pipeline diameter, project length, and supplemental direct costs were summarized, social and environmental cost issues were discussed, and the gaps between current cost data capture practices and future needs were presented.

Furthermore, a standard data structure is proposed for wastewater utilities to use for cost reporting purposes when performing condition assessment and renewal engineering work on their buried pipelines. The collection of the information presented in the proposed standard data structure for utility reporting would provide the data needed to greatly improve utility cost estimating processes and to more easily direct research toward industry needs. The standard data structure was utilized to gather the desired cost data as a pilot; once data is gathered using the standard method and structure, robust cost trend analyses can be performed.

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